1. **Research Councils UK (RCUK)** is the strategic partnership of the UK’s seven Research Councils. Our collective ambition is to ensure the UK remains the best place in the world to do research, innovate and grow business. The Research Councils are central to delivering research and innovation for economic growth and societal impact. Together, we invest £3 billion in research each year, covering all disciplines and sectors, to meet tomorrow’s challenges today. Our investments create new knowledge through: funding research excellence; responding to society’s challenges; developing skills, leadership and infrastructure; and leading the UK’s research direction. We drive innovation through: creating environments and brokering partnerships; co-delivering research and innovation with over 2,500 businesses, 1,000 of which are SMEs; and providing intelligence for policy making. Find out more about our work at [www.rcuk.ac.uk](http://www.rcuk.ac.uk).

2. This evidence is submitted by RCUK and represents its independent views. It does not include, nor necessarily reflect the views of the Knowledge and Innovation Group in the Department for Business, Innovation and Skills (BIS). The submission is made on behalf of the following Research Councils:

   - Arts and Humanities Research Council (AHRC)
   - Biotechnology and Biological Sciences Research Council (BBSRC)
   - Engineering and Physical Sciences Research Council (EPSRC)
   - Economic and Social Research Council (ESRC)
   - Medical Research Council (MRC)
   - Science and Technology Facilities Council (STFC)

**Summary**

3. RCUK supports the aspiration laid out in the Academy of Medical Sciences (AMS) terms of reference and background paper for the Health of the Public in 2040 project. We welcome the opportunity to contribute to the Working Group’s discussions. We are keen to continue the dialogue around the project and to discuss elements of the vision as it develops and how best to align it with and utilise past, current and future research initiatives across RCUK.

4. The research funded by RCUK generates a breadth of knowledge and understanding which has an important role to play in improving and protecting the nation’s health and amounts to a significant investment, for example, the MRC spent £69 million on population health research in 2013/14. It is important that AMS and RCUK continue a close dialogue to ensure that both existing and new knowledge from RCUK-funded research is effectively translated into public health benefits and that where possible, the AMS recommendations harmonise with planned actions of funders to support the rapid implementation of some key areas.

5. The AMS ‘call for input’ highlights the broad range of non-health factors with the potential to impact the health of the public and consideration should be given to ensuring recommendations go beyond health interventions to take account of the social influences on health (e.g. the built environment and infrastructure) as these and other key social factors are known to have a significant impact on health. The societal impact on health remains an important research area going forward.
6. There is a very large and rich existing research environment within the UK and it will be essential for AMS, in taking forward its recommendations, to remain cognisant of this and to ensure realisable ambitions are set to ensure that research is central to improving the health of the public. There is a need to develop greater mechanistic evidence and risk stratification to support the development of public health interventions.

7. The realisation of the aspirations of AMS will necessitate exploiting new technologies (including informatics, genomics and novel biomarkers; as well as digital technologies e.g. sensors) for public health benefit. As the primary public funders of research which develops and uses these technologies, RCUK is in an excellent position to support AMS in delivering, through research, tangible outcomes and advances to assist AMS in moving towards realising its aspirations.

Q1. The working group and various stakeholders have collectively articulated their aspirations for the future health of the UK population. These are described in the background document (page 2). Do you share these aspirations? If not, why? What other aspirations do you have?

8. RCUK is in broad agreement with the aspirations portrayed and supports the need to consider the very broad and all-encompassing range of issues outlined in the background paper. RCUK works together, where appropriate, to deliver a multidisciplinary approach to issues affecting the health of the public and each Research Council also delivers its own strategic projects to strengthen and develop key areas.

9. While we would agree that all of the factors raised by AMS are relevant to the current and future health of the public, it would be beneficial to funders if the AMS recommendations also aimed to highlight some of the more tractable issues that research can help to address. Where the AMS recommendations harmonise with priorities of funders we would be keen to support the development of 'key research questions'.

10. Key areas where RCUK considers there to be potential for new thinking or scope for transformational change are around the potential future power of informatics, strengthening our understanding of maternal and child health and the maintenance of health through the lifecourse; and how to fully harness 'prevention' research whilst working to reduce the health and social inequalities that impact the health of the public.

11. Informatics: We foresee great opportunities to put data at the heart of medical innovation, both in terms of supporting a dynamic healthcare system and accelerating the translation of biomedical discovery, population and public health research. Whilst we are not able to foresee the exact nature of how this field will progress, we are convinced that there is the potential to effect transformational change. The increasing opportunities to link molecular (e.g. genomics) and other complex datasets, to clinical care, is a particular opportunity that could be developed by the AMS vision. Alongside this there are also great ambitions to move towards stratified public health and personalised prevention, again these are areas where informatics may be able to help generate transformative change. The
MRC, EPSRC and ESRC, together with charity and government partners’ investment in the Farr Institute for Health Informatics Research and medical bioinformatics capacity aims to transform the capabilities of the UK to deliver against the promise of data-driven health innovation\(^2\).

12. Increasing the workforce and establishing the necessary infrastructure to transform the UK’s capabilities in health and biomedical data science will be critical to delivering against the opportunities presented. Ensuring the public’s support for the ethical use of health data will also be vital and requires the development of clear and transparent legislative, governance and policy frameworks that engender trust in the use of individual health data for research, leading to better clinical care. To advise on emerging scientific, legal and ethical issues associated with data access for human genetics research and cohort studies ESRC, the MRC, the Wellcome Trust and Cancer Research UK established the Expert Advisory Group on Data Access (EAGDA)\(^3\).

13. **Maternal and child health:** Stemming from the Barker hypothesis\(^4\), we have a long-standing interest in the influence of maternal health and other factors which impact on foetal development and can influence long-term health and wellbeing. Our improved understanding of how developmental programming can increase long-term disease risk is an area that warrants an increased focus to inform future intervention and prevention strategies. Future RCUK funding strategies will also have a focus on the preservation of health into adulthood and older age, both around the preservation of healthy lifestyles but also around key issues and diseases that impact society e.g. mental health.

14. This area has strong synergies with research into **lifelong health**: there are opportunities to better understand the fundamental biological mechanisms of the ageing process across the lifecourse, including their modulation by nutrition, physical activity, developmental factors and the extent to which these impact on health in later life. This will increase our understanding of the effect of modern lifestyle on human health; e.g. sedentary behaviour, night shift work and sleep disruption. There is also a need for development and validation of appropriate outcome measures, such as biomarkers of healthy ageing, which could be used to monitor health status and track the impact of particular interventions.

15. **Prevention:** We have been undertaking a review of the multi-funder National Prevention Research Initiative (NPRI). The lessons-learnt from this initiative, which was ground-breaking in its day, are being distilled to consider how best to support prevention research going forwards. Future multi-partner research is likely to be aimed at ensuring a balance of support across observational, developmental, and intervention studies, and between individual and population interventions. Future strategies are likely to place a greater emphasis on the need for public health interventions to be based on mechanistic evidence and to support stratification to ensure that research into prevention in lower socioeconomic status groups, ethnic minorities, and population strata is commensurate with the known differences in lifestyle and health.

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\(^1\) [http://www.mrc.ac.uk/news-events/news/20-million-for-new-health-informatics-research-institute/](http://www.mrc.ac.uk/news-events/news/20-million-for-new-health-informatics-research-institute/)

\(^2\) [http://www.mrc.ac.uk/research/initiatives/health-and-biomedical-informatics/initiatives-in-informatics-research/](http://www.mrc.ac.uk/research/initiatives/health-and-biomedical-informatics/initiatives-in-informatics-research/)

\(^3\) [http://www.wellcome.ac.uk/About-us/Policy/Spotlight-issues/Data-sharing/EAGDA/](http://www.wellcome.ac.uk/About-us/Policy/Spotlight-issues/Data-sharing/EAGDA/)

16. This approach would include considering how research aimed at understanding how to **reduce health inequalities**, by socio-economic status, age, gender, ethnic or religious group, sexual orientation and geographic area. This should include the whole spectrum of research from the underlying epidemiology, identifying the causes of inequalities at the different stages of the lifecourse and the potential levers for change, to the development, testing, evaluation and roll-out of interventions to reduce inequalities in health. Interventions should also be focussed on policy interventions (in addition to individually-focussed interventions) and these must extend across all sectors, and involve real partnership between sectors, and not just the health sector. Appropriate evaluation of policy interventions and effective knowledge exchange will be needed and effected by ensuring close partnerships between the policy, research and user communities.

17. As part of the prevention agenda, there is a key research focus on **food, nutrition and health**. New and effective policies, therapies, products and interventions are urgently needed to mitigate the serious public health consequences of dietary excess and deficit. Developing these will require a deeper understanding of the complex relationships between food, nutrition and health. This insight can be best delivered through multidisciplinary and integrative research across the biological (basic and medical) and social sciences which considers the multiple, interrelated factors contributing to human health and behaviour. Recognising this, BBSRC, MRC and ESRC have recently co-developed a cross-Council vision for the support of food, nutrition and health research⁵, which seeks to identify key opportunities for collaborative approaches to address these challenges. BBSRC has also produced a detailed Food, Nutrition and Health Strategic Framework⁶ to complement the cross-Council vision.

18. Within RCUK, EPSRC has launched a new grand challenge approach to Healthcare Technologies to support novel engineering, ICT, mathematics and physical sciences research with the aim of accelerating translation to healthcare applications. This approach is aimed at identifying and defining important challenges, assembling effective teams to tackle these challenges and providing sufficient support for them to do so. Through this strategy we aim to address four grand challenges⁷:

- **Developing Future Therapies**: Supporting the development of novel therapies with technologies to enhance efficacy, minimise costs and reduce risk to patients.
- **Frontiers of Physical Intervention**: Restoring function, and optimising surgery and other physical interventions to achieve high precision with minimal invasiveness.
- **Optimising Treatment**: Optimising care through effective diagnosis, patient-specific prediction and evidence-based intervention.
- **Transforming Community Health and Care**: Using real-time information to support self-management of health and wellbeing, and to facilitate timely interventions.

19. RCUK also supports research relating to cultural perspectives and has an interest in exploring the synergies between culture and creative practice and health and wellbeing. As well as community engagement and participatory approaches to

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⁷ [https://www.epsrc.ac.uk/files/research/htstrategysummary/](https://www.epsrc.ac.uk/files/research/htstrategysummary/)
healthy behaviours, historical perspectives, and issues such as integration across services are explored. For example, through the AHRC/Scottish Funding Council Healthier Scotland programme the AHRC funded a knowledge exchange programme ‘Visualising the invisible’ which developed innovative approaches to visualisation to help NHS staff prevent and control Healthcare Associated Infections (lead partners NHS Lanarkshire, NHS Grampian, NHS Education). AHRC also supports research areas relating to authority, ownership and justice within and across time, and these may help inform our understanding of a range of current and future global challenges faced by society today.

Q2. What do you think will be the major drivers of change which will influence the population’s health over the next 25 years and what are the key uncertainties surrounding these drivers?

20. RCUK broadly agrees with the ‘drivers of change’ described within the background paper but would encourage a broader view of some of the concepts described; for example:

- Extending the concept of ‘translating research’ beyond the medical model to encompass the ‘exchange or co-production of knowledge’.
- Highlighting the impact of the changing make-up of the population in terms of culture, race, ethnicity, religion and the impact this may have on future health patterns.
- Highlighting the changing role of the state, both in terms of devolved and decentralised administration for services relating to health, and also the role of different actors in replacing what was once provided by the state.

21. Many drivers of change are listed in the report but there was little mention of how change might be brought about by many of the listed drivers. This will require, in particular, holistic cross-governmental efforts that are not solely in the realm of the NHS. Further change, or solutions, may be brought about not just by Government policy or a focus on individual agency but combinations of these and with additional investment, understanding and action in intermediate areas such as social capital, social relationships, families, communities, and major organisations including employers, schools and prisons.

22. Although inequality is noted as a driver of change its importance is perhaps underestimated. Wealth creation alone is insufficient to improve population health; less equal societies will continue to suffer as a result of their inequality. As mortality rates in general decline, inequalities in mortality (certainly in relative mortality) have tended to increase. This means that we risk many non-communicable diseases and causes of death that currently show strong social patterning; such as those related to suicide, violence, and drug and alcohol misuse; becoming almost exclusively causes of death of the poor.

23. Many of the potential drivers that are listed, and the extent to which they do indeed determine population health in 2040, will be determined by UK politics. Austerity is mentioned but it is unclear how the aftershock of the financial crisis will resolve itself globally or within the UK. Further recession or stagnation could mean that the UK could face a “lost decade” or a longer period of no, or negative, growth.
24. **Business** is seen largely as a positive driver of change through corporate social responsibility. However, some of the growing threats to population health could be seen as stemming from the power of the corporate sector, notably big corporations e.g. alcohol and food, or exploitative employers. Mitigating these effects may increasingly become the role of the state, protecting people from the associated risks in the same way that it has protected the public from previous risks to public health through sanitation, clean air etc. This should be linked to the realisation that a healthy and equal society is needed for the UK to be a globally competitive economy.

Q3. **What are the potential shocks or disruptive events that might need to be taken into consideration in planning for the future?**

25. RCUK highlights the following areas as highly relevant as events that affect the health of the public:

- Recession;
- Global outbreaks of untreatable disease (Ebola, Pandemic Flu, Multi-Drug Resistant Diseases) could have global impacts, including on both the health of the UK population but also the UK health service;
- Within the conflict scenario, there is also the potential for mass migration as a result of war; and
- Political.

26. Political shocks could be related to issues around the Transatlantic Trade and Investment Partnership; a referendum on UK membership of the EU; and the potential for a second independence referendum in Scotland. For all such events the impact on population health is unclear.

27. A further **disruptive event**, in so far as research is concerned, is the impact of legislation. For example, the impact of the General Data Protection Regulation and concerns arising from the proposals adopted by the European Parliament that would seriously inhibit the use of data concerning health in research. The proposals from the European Parliament were described by the BMJ as making “most epidemiological and medical research impossible”\(^8\). The format of any legislation with the desire to harmonise data protection law across Europe, has the potential to be restrictive to the UK in developing informatics approaches to health research.

Q4. **What research evidence is (or will be) needed to address these aspirations and reduce these uncertainties, and to what extent is the required research currently taking place?**

28. RCUK funds a large programme of work and investments that support the medical, social, technological and public health aspects portrayed in the background paper. The scale of current investments and future plans are too significant to effectively

\(^8\) Ploem MC, Essink-Bot ML, Stronks K. Proposed EU data protection regulation is a threat to medical research. BMJ 2013; 346:f3534.
summarise here however we have listed a few examples to give a flavour of the breadth of RCUK investments.

29. The MRC, in partnership with the CSO and University of Glasgow\(^9\) funds the Social Public Health Sciences Unit which undertakes research to promote human health through the study of social and environmental influences on health. The Unit has key research themes addressing:

- studying how people's social positions, and their social and physical environments, influence their physical and mental health and capacity to lead healthy lives
- designing and evaluating interventions aiming to improve public health and reduce social inequalities in health, and
- influencing policy and practice by communicating the results and implications of research to a wide range of audiences.

30. The importance of working across disciplines and using data is highlighted through the ambitious ESRC-NIHR funded dementia award, MODEM. This project brings together a highly interdisciplinary team covering economics, epidemiology, social policy, health services research and more. It aims to draw data from an exceptionally wide range of sources to build a model of what the ‘dementia picture’ will be like in 2040: who will have it, what will their needs be, what will care cost, can it be prevented? This and other awards funded under the ESRC-NIHR dementia initiative are also important in demonstrating the impacts of different types of care on wellbeing and health outcomes.

31. At the technology end of the spectrum, EPSRC funds SPHERE, which is an £11.6m, Interdisciplinary Research Collaboration led by University of Bristol. SPHERE is working to develop sensors for the home to diagnose and help manage health and wellbeing. This technology will aid early diagnosis, lifestyle change and support the ability of patients to continue to live at home.

32. AHRC, through a project funded to Sheffield Hallam University is leading A Development project to determine and progress the 'state of the Art' of Design theory and Practice in healthcare. This research aims to ensure ‘design’ has a key role within healthcare. This project aims to determine the ‘state of the art’ in design in health and identify the key areas that will deliver the most benefit for colleagues in design, health and associated industries. At the core of this proposal is the recognition of those individuals to whom better healthcare matters most, the patients, carers and users of health and social care.

33. The detail of a wide range of investments with relevance to public health was recently compiled in the RCUK response to the consultation from Public Health England on a Strategy for Research, Development and Innovation and we would be happy to share this with you if you consider it to be of relevance. We encourage AMS to continue this engagement through further dialogue with representatives from the Research Councils. This would help to inform AMS on where the Research Councils are aligned with the Working Group’s developing recommendations and where we might support their delivery.

\(^9\) The SPHSU receives core funding from the UK Medical Research Council and the Chief Scientist Office at the Scottish Government Health Directorates. It is a University Unit within the College of Medical, Veterinary and Life Sciences at the University of Glasgow and is part of the Institute of Health and Wellbeing.
In addition to the examples given above, we also consider there are many areas where new evidence or approaches may be required and we have alluded to the response to Question 1. We would again highlight the research needs around **personalised medicine** and **prevention**. Research will be required to address the characteristics which enable personalisation e.g. socio-demographic, family history, genetics, epigenetics, and other ‘omic’ approaches, **informatics, digital technology**. **Lifecourse** prevention is required from cradle to grave and the UK’s rich **cohort data** set should be fully explored from both **health** and **social** perspectives.

It is also essential that we continue to undertake research that crosses national boundaries to address aspirations and uncertainties, as not only are many health related issues ‘international’ in nature, but also international evidence can help elucidate national patterns. Again, Research Councils have shown considerable leadership in this area for example:

- Through the European initiative More Years Better Lives, which investigates the drivers to, and constraints on, extending working lives. Research is expected to cross the traditional boundaries of Government departments and occupational sectors and to examine the implications of extending working life for older workers (50+), new labour markets, health, wellbeing and intergenerational equity.

Q5. Given the above, what needs to be done to support, deliver and realise the value of this research? Particular consideration should be given to:

a. **Research capacity** (for example, training, workforce, skills, relevant academic disciplines and funding)

b. **Research infrastructure** (including physical, virtual and institutional infrastructure)

c. **Mechanisms for translating research into policy and practice**

a. **Research capacity**:

A key part of the mission of the Research Councils is to support capacity building and to ensure the development of skilled researchers across a broad range of disciplines (such as engineers, social scientists, biologists etc). More and more we recognise the value and importance of encouraging platforms where disciplines (such as engineering, social science and biomedical research) can be straddled to ensure the UK is equipped with a cadre of researchers able to address the types of complex multidisciplinary challenges that arise when tackling areas such as public health. This view was echoed in the recent EPSRC review ‘The importance of engineering and physical sciences research to health and life sciences’ which recognised the importance of investing in non-medical as well as medical sciences, to drive novel ideas and new technological developments in the health and life sciences.

10 https://www.epsrc.ac.uk/newsevents/pubs/the-importance-of-engineering-and-physical-sciences-research-to-health-and-life-sciences/
As well as delivering large doctoral training programmes, the Research Councils play a leading role in ensuring that the UK science base across all sectors is provided with future research leaders who possess advanced research skills, particularly in areas of unmet national need.

The MRC’s current cross-cutting priorities for skills provision were established through an open consultation around vulnerable skills and includes the following cross-cutting themes:

- Quantitative skills (mathematics, statistics, computation, developing digital excellence) as applied to a variety of data sources (from ‘omics’ to health records), and
- Interdisciplinary skills (at all interfaces including chemical/physical/engineering, social/economical and clinical, including for example imaging, health economics, antimicrobial resistance and translational medicine).

EPSRC supports doctoral training across the engineering, ICT, mathematics and physical sciences disciplines, all of which are important to the healthcare and the life sciences sector. For example, 48 of the 115 Centres for Doctoral Training (CDTs) funded by EPSRC are relevant to health and include topics spanning Regenerative Medicine, Medical Devices, Biomedical Imaging, Chemical Biology, Autonomous and Robotic Systems and Mathematics. A number of these CDTs are jointly funded with other Research Councils to create environments that promote multidisciplinary research and training.

RCUK also takes a leading role in developing key infrastructure through multi-partner initiatives such as the National Prevention Research Initiative (NPRI11) and the UK Clinical Research Collaboration (UKCRC) Public Health Research Centres of Excellence12, and supporting key national resources such as cohorts and biobanks which produce evidence to support improvement to the health of the public to inform the development of effective strategies for promoting healthy behaviour and tackling lifestyles that lead to disease. To give a flavour of the activities, we have listed some of our joint initiatives:

- **The Farr Institute**: The key infrastructure investment that we consider to have the potential to be transformative is the Farr Institute, which together with the multi-funder investment13 in e-health informatics research centres (eHIRC) will accelerate the development of a UK-wide platform for health informatics research, including digital infrastructure to securely share data, support linkage at scale and develop standards. This will help enhance the use of NHS records for research, and strengthen partnerships with the NHS, industry and other UK academic research centres.

13 £19m multi-funder investment (£5.8m MRC) over five years to support four Centres (based at University College London (UCL), Manchester, Swansea and Dundee). The other funding partners involve EPSRC and ESRC, the health departments in England, Scotland and Wales and four large research charities (Arthritis Research UK (ARUK), The British Heart Foundation (BHF), Cancer Research UK (CR-UK) and the Wellcome Trust).
• **UK-wide Antimicrobial Resistance Funders Forum (AMRFF):** All Research Councils are involved in the highly ambitious forum which was established by MRC to strategically coordinate UK AMR activities, in order to enhance existing programmes and create a common coordinated vision. Tackling AMR requires a holistic approach in order to tackle a global problem and will support research through the Antimicrobial Resistance cross-Council Initiative and play a key role in taking on this challenge.

• The UK supports an unparalleled volume of **large scale population studies (cohorts)** which provide a wealth of longitudinal, phenotypic, biological, economic and social data for studying health and wellbeing throughout the lifecourse. The recent MRC review of population cohorts (those with more than 1,000 participants) highlighted a collection of 34 cohorts funded across the RCUK partners and the major biomedical charities[^14]. These types of investment are of fundamental importance in understanding long term trends, emerging health relevant issues, and antecedents of illness.

• The **MRC Dementias Platform UK (DPUK)** is a multi-million pound public-private partnership, developed and led by the MRC to accelerate progress in, and open up, dementias research. The DPUK’s aims are early detection, improved treatment and, ultimately, prevention of dementias. Alongside this the £8m EPSRC investment in ‘Sensing and Imaging for Diagnosis of Dementias’ will explore a variety of techniques and technology aimed at improving detection and diagnosis of dementias. The research involves academics from 11 UK universities. Through the cross-Council Connected Communities programme’s Health and Wellbeing strand the AHRC are investing £1.2m in research exploring the disconnection and marginalisation of people with dementia and explores how the vision for dementia supportive communities might benefit from creative activities. Led by Bangor University the project involves six UK universities and 11 non-academic partner organisations (including Age Watch, Alzheimer’s Society and the Derbyshire community health services NHS).

• Founded in 2004 the **NPRI** invested £34m in 74 research projects aimed at preventing chronic non-communicable disease by reducing tobacco use, alcohol misuse and regulating diet and/or physical activity. This initiative paved the way for new thinking around how to support future research on prevention.

• The **UKCRC Centres** are also very active in this space. For example, the **UK Centre for Tobacco and Alcohol Studies (UKCTAS)** based in Nottingham seeks to see if current theorisation of tobacco use and behaviour change can be applied to behaviour change and reduction of harm. The **Centre for Diet and Activity Research (CEDA)**, an amalgamation of research hubs at the University of Cambridge and the University of East Anglia, is focusing on understanding population level determinants of diet and physical activity, developing preventative interventions and evaluating effectiveness and impact of interventions.

• The **Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement** based in Cardiff has a particular focus on developing and evaluating multi-disciplinary, multi-level

interventions to improve the health and well-being of children and young people in areas that include diet and nutrition, physical activity, and alcohol, tobacco and drugs.

c. Translation research into policy and practice

41. RCUK recognises that social and economic impact is delivered by diverse stakeholders such as business, policymakers, charities, healthcare professionals and others, and that the primary role of the research community is to provide evidence or tools to support change. Through our research activities RCUK helps to make it more likely that impact will arise, that it will arise more quickly and that it will bring benefit to the UK. For instance MRC-funded research carried out between 2006 and 2013 has led to the development of almost 4,000 instances of influence on policy and practice, including more than 370 contributions to clinical guidelines. RCUK supports inter- and cross-disciplinary approaches to research and translation to ensure complex issues are addressed in a holistic way.

42. RCUK encourages the potential for translation (in its widest sense) to be embedded and to recognise that the benefits of research cannot be fully realised if it is conducted in isolation from the users of the research, be they biomedical and clinical researchers, or clinicians, pharmaceutical and medical technology companies, charities, policy makers or other users. It is vital to emphasise the need for the ‘co-production’ of research, i.e. working with stakeholders within and beyond academia when designing and carrying out research. This increases the likelihood of other stakeholders having the capacity and appetite to engage with evidence that is produced.

43. The Research Councils work closely with Innovate UK e.g. through the MRC/Innovate UK Biomedical Catalyst\textsuperscript{15} which is a funding programme jointly operated with Innovate UK to provide responsive and effective support for translational life science opportunities arising in the UK. Funding is available for UK academics and small and medium enterprises (SMEs) who are seeking support to help move their research more quickly from discovery into commercialisation.

44. Within public health it is accepted that the factors involved in setting our behaviours and motivating behaviour change are complex and varied. This accounts for the difficulty in implementing a ‘one-size-fits-all’ approach to public health issues. However, research is a vital mechanism to unpick the complexity and attempt to identify key components of successful interventions and factors to help stratify the population to provide the best chance of success. This complexity also exists in attempting to translate research into successful policies. It is imperative to consider knowledge translation as a key area going forwards and how to consider the needs of a range of policy and practice users including local government, whilst maintaining the effective ingredients of the intervention to be implemented.

\textsuperscript{15} http://www.mrc.ac.uk/funding/science-areas/translation/biomedical-catalyst/