Public Health and Prevention Research

Paper for UKCRC Board meeting, October 2018

1. Background

a) The health of the UK population is influenced by factors that range across biology, society, health services, physical, commercial and social environments throughout the life-course including climate, human behaviours…and more (together termed the wider determinants of health). We may consider public health activities to cover the quantification of impacts of these factors through diverse quantitative and qualitative approaches and their *prevention or mitigation at a population level. Across the many factors, different types of research contribute knowledge and evidence for action.

(* primary prevention - preventing healthy people from getting sick and secondary prevention – early detection, mitigation of the impacts of established morbidity including preventing recurrence and end of life matters).

b) It is challenging to portray the state of the many research approaches, most impactful research, key enablers including funding or its desirable futures across such a broad landscape. For conventional ‘health’ research funding, the 2nd and 3rd Health Research Classification System (HRCS) reports1 indicated successive increases in spend on ‘prevention’ research, ie a subset of relevant activity, however the increase was just 2.9% over the 10 year period starting from £27m in 2004/05 out of a total of ca. £3Bn per annum.

c) The 2016 publication ‘Improving the health of the Public by 2040’ (HoTP20402) highlighted the need for transdisciplinary research, a broader understanding of the health of the public among professionals, improved engagement among practitioners and researchers and coordination of research funding. The recommended UK Strategic Coordinating Body for Health of the Public Research (SCHOPR) has been established as a sub-group of the OSCHR Board.

d) The 2017 DHSC / NIHR-led Future of Health3 reported a comprehensive survey of stakeholders (in England) that highlights population ageing, increasing years
of life with ill health, health inequalities, changing models of health service and care and new technological opportunities. Priorities for research funders include improving the application of advanced methodologies and better translation and implementation of findings, working with patients and the public.

e) Public health agencies in each country have committed to the use of evidence and innovation to achieve solutions. For example, Public Health England’s (PHE) From evidence into action: opportunities to protect and improve the nation’s health (2014)⁴ and Public Health Priorities for Scotland (2018)⁵ the latter setting out explicit evidence-based criteria to select: place and communities, early years, mental health and wellbeing, tobacco, alcohol and other drugs, poverty and social inclusion, diet and physical activity. The positive return on investment in population health interventions has been documented⁶.

f) In each UK country differences in deprivation correlate with differences in healthy life expectancy. Might public health and prevention research aspire to address these?

Table: difference in healthy life expectancy between the most and least deprived populations (not for inter-country comparisons)⁷

<table>
<thead>
<tr>
<th>UK country</th>
<th>Birth year</th>
<th>Basis</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>2014 - 16</td>
<td>20% most and least deprived</td>
<td>&gt;18 years</td>
<td>&gt;18 years</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>2014 - 16</td>
<td>10% most and least deprived</td>
<td>13.7</td>
<td>13.0</td>
</tr>
<tr>
<td>Scotland</td>
<td>2015 - 16</td>
<td>10% most and least deprived</td>
<td>26.0</td>
<td>22.2</td>
</tr>
<tr>
<td>Wales</td>
<td>2014 - 16</td>
<td>20% most and least deprived</td>
<td>&gt;17</td>
<td>&gt;17</td>
</tr>
</tbody>
</table>

g) This current paper does not address the global reach and potential impact of our research strengths in population health protection and improvement.

2. Update on major initiatives

a. The decade of support from UKCRC partners for the Centres of Excellence in Public Health has ended with evidence of real achievement particularly in building capacity for research and user engagement. Aspects of this work are progressing through various funding sources.

b. The National Prevention Research Initiative (NPRI) created a plethora of projects with strong policy and practice relevance. This initiative is credited with
driving the increased spend on prevention research shown in the HRCS reports. Learning from NPRi facilitated progress towards the UK Prevention Research Programme (UKPRP) in which many UKCRC Board member organisations are now engaged, selecting future consortia and networks to a total value of £50m. The UKPRP aims to align with aspirations set out in HoTP2040 however their new arrangements will take time to embed so the impact achievable over just 5 years may not be major.

c. The NIHR’s School for Public Health Research is in its second 5-year period, supporting and coordinating research across thirteen member universities on themes: public mental health; places and communities; children, young people and families, each with a particular focus on evaluating the effects of PH interventions to reduce inequalities; efficient and equitable public health systems; behaviour change at a population level. A modest budget (£20m) funds specific multi-member projects and assists members’ participation in major project / programme investment. Other NIHR Schools (for Primary Care Research and Social Care Research) are supported similarly and also conduct public health and prevention research.

d. The NIHR Clinical Research Networks (CRN) and devolved equivalents are significant assets in research development and performance. However studies undertaken outside of NHS / its equivalents are few. Recent changes in the criteria so that such studies can access portfolio-based support are taking time to be effective.

e. New NIHR Policy Research Units include Public Health, Mental Health, Behaviour Change and the forthcoming NIHR Applied Research Collaborations (ARCs) may have a greater focus on population health than their preceding Collaborations for Leadership in Applied Health Research and Care (CLAHRCs).

a. While the significant burden of UK ill health is non-communicable disease (NCD), important questions remain about infectious diseases in the UK and globally. The NIHR Health Protection Research Units (HPRUs) enable university-based researchers to partner PHE and apply for other project funding. The HPRUs also research the human consequences of environmental influences, including climate change. A critical gap is for researchers at the interface of NCDs and infections to work together as both types of illness affect individuals, e.g. in ageing populations with frailty, comorbidity and delirium.

b. In parallel, significant investments have enhanced research capabilities that can accelerate population-scale studies, data science in particular.
3. Challenges

a. Research activity in UK healthcare organisations, led and undertaken by their staff, is strong, with significant organisational commitment, patient involvement and engagement. But research addressing protection against, or mitigation of, the impacts of the factors responsible for population morbidity and mortality rarely occurs in hospitals. To markedly increase the volume, relevance and impact of public health research, a key component is infrastructural investment for transdisciplinary, multi-sectoral population health research. This much-needed investment can learn from NHS-based clinical research investments but make substantial adaptations, e.g. to bring diverse disciplines together and to embed engagement with decision-makers and practitioners across the many sectors that influence population health.

b. The HoTP2040 recommendation of ‘regional hubs of engagement’ across public health practice and universities is an important articulation of this vision and some (albeit very vulnerable) progress is evident in parts of England, focussing largely on evaluation of interventions and the capability to do so. Structures in the devolved administrations, mostly notably the School Health Research Network in Wales, are important legacies of the UKCRC Centres of Excellence in Public Health.

c. The NIHR is considering a public health research infrastructure that would facilitate local authority engagement. This is positive but the need is for a public health research infrastructure that covers whole populations including local authorities and health / care services. The reality therefore lags NHS research developments by decades and current public spending constraints do not incentivise research capable staff among the public health workforce, the formation of research partnerships (with universities) or development of governance arrangements. Research relationships among public health service providers, universities and the third sector have had to be re-built; a particularly slow process currently. And research with the very diverse commercial sector is both complex and difficult including the need to retain research credibility, managing (real and perceived) conflicts of interest.

d. Research training and career development are well-embedded in clinical environments. While public health practitioners express enthusiasm for accessing programmes and those who apply have similar success rates to others, few actually participate. Deterrents include work pressures and organisational attitudes. Potential training pathways are usually termed ‘clinical academic’ however there is an opportunity for research training focussed on remaining within the practice environment. Joint posts with universities after the end of training would help to attract able individuals to critical service roles.
4. Discussion and Next Steps

a. There is much consensus in the reports listed above* on the major issues to be addressed in current and near-future UK ill health and on shifts necessary in the research landscape so that evidence from research is available to guide policy and practice. Funding initiatives from individual providers and consortia are continuing the beneficial trend initiated via NPRI, UKCRC Centres of Excellence etc. However, the underlying problems have continued to worsen, evidence on the most effective population-level interventions is either lacking or has not been followed through to implementation and it is timely to consider the best research investment strategies to effect change over the coming decade.

b. In addition to the combined strength of UKCRC Board member organisations, the co-ordinated breadth of UKRI’s remit, UK spending review and SCHOPR-led developments present new opportunities.

c. Do Board members see value in committing to a single ambition, for example:

‘To eliminate the difference in morbidity between the richest and poorest parts of the UK population’:
- in 5 years to understand the most effective measures to reduce by 10% the difference in morbidity between the richest and poorest parts of the UK population
- in 10 years, with partners, to have applied research findings to achieve a 10% reduction in..’

and developing individual and collective strategies / funding initiatives to achieve that?

d. The most important contributions would most likely be national with multiple funders. Progress could be tracked in routine updates to UKCRC Board meetings / SCHOPR

e. Would Board members value a future discussion on UK global public health and prevention research and its potential?

*and other reports; the Academic Research Committee of the Faculty of Public Health (FPH) is completing a scoping review – that has been of value in compiling this paper – as it sets out a FPH research blueprint to address key societal challenges in the next decade.
References

1. https://hrcsonline.net/reports/analysis-reports/uk-health-research-analysis-2009-10/
6. For example, https://jch.bmj.com/content/jech/71/8/827.full.pdf

England and Wales
https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthinequalities/bulletins/healthstatelifeexpectanciesbyindexofmultipledeprivationimd/englandandwales2014to2016FiFi

Scotland https://www.gov.scot/Publications/2017/12/4517/5