Public Health England

Protecting and improving the nation's health

NHS Health Check programme: priorities for research

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

Public Health England
Wellington House

133-155 Waterloo Road
London SE1 8UG
Tel: 020 7654 8000
www.gov.uk/phe
Twitter: @PHE_uk

Facebook: www.facebook.com/PublicHealthEngland

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Research priorities for the NHS Health Check programme

The purpose of this paper

The NHS Health Check programme is a national risk assessment, awareness and management programme that systematically targets the top seven causes of preventable deaths: high blood pressure, smoking, high cholesterol, obesity, poor diet, physical inactivity and alcohol consumption. The early identification and management of these risks could substantially reduce the morbidity, mortality and health inequalities that result from the diseases they cause, including diabetes, chronic kidney disease, dementia and cardiovascular disease.

If the NHS Health Check programme is to achieve its potential as one of the largest systematic prevention programmes in the world, it must be grounded in and led by the best possible evidence. That evidence base is currently incomplete. This can and must be addressed by generating relevant new knowledge, and then translating that knowledge into practice. This will allow us to better understand the impact of the programme, maximise its benefits to population health, and contribute to the international evidence base.

The purpose of this paper is for Public Health England (PHE) to consult on the key research priorities for the NHS Health Check programme. The proposals included in this paper reflect the input from stakeholders as well our understanding of the state of current knowledge and academic research in this area.

The broader purpose is to encourage commissioners of research and relevant research active organisations to address those research questions and other priorities that PHE and its stakeholders have identified as most relevant to the programme.

This paper will also identify other issues for consideration, related to the research agenda, including:

- the data, capacity and infrastructure needed to facilitate future research and evaluation
- translation of research into practice
- communication of research aims and findings
- the audience for this paper includes people who are active in research that is of relevance to NHS Health Check, commissioners of research and the users of research and other related outputs

Background to NHS Health Check – PHE leadership

Background

The Global Burden of Disease Study (2010) indicates that while life expectancy has improved in the UK over the past 20 years levels of ill-health have not and the UK is now below average compared with 18 other countries on many important indicators.[1] Furthermore, there are persistent health inequalities between the least and most deprived areas in England.

This situation is simply not acceptable in a country such as the UK with a highly competent and comprehensive health service, and a well-founded public health system with a distinguished history. However, a careful and empirically sound approach is required if preventive services are to be delivered effectively in order to improve the health of the least well-off. Improving health inequalities will require a sustained and deliberate effort across a number of sectors including preventive health services.[2]

The NHS Health Check programme was formally introduced in April 2009 as a population-wide prevention programme targeting 40-74 year olds. The NHS Health Check is specified in secondary legislation, and its implementation is the legal responsibility of local authorities. Local Authority Regulations (2013)[3] set out who should receive an NHS Health Check, the assessments that should be undertaken and how the check should be conducted. Amending or introducing new content requires the approval of ministers and parliament. There is, nonetheless, scope for innovation in the delivery of the programme and that innovation needs to be based on good quality evidence.

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[1] Murray CJL, Richards MA, Newton JN, Fenton KE, Anderson HR, Atkinson, C et al. UK health performance: findings of the Global Burden of Disease Study 2010. The Lancet. 2013 March 23; 381(9871):997-1020

www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60355-4/abstract

[2] Marmot M, Fair Society, Healthy Lives: The Marmot Review: Strategic Review of Health Inequalities in England post-2012. University College London: Health Institute of Health Equity, 2010 Feb. Commissioned by the Secretary of State for Health.

www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review/fair-society-healthy-lives-full-report

[3] The Local Authorities (Public Health Functions and Entry to Premises by Local Healthwatch Representatives) Regulations 2013. (February 2013)

www.legislation.gov.uk/uksi/2013/351/regulation/5/made

The NHS Health Check programme has four key elements:

- recruitment: offer of an NHS Health Check and its acceptance. From 2012-13, the first full year of implementation, 2.7 million offers were made and 1.26 million appointments were taken up. The aim is for 20% of the eligible population to be offered an NHS Health Check each year, with a take-up rate of 75%
- assessment: use of standardised tests to measure key risk factors. These include smoking status, body mass index, blood pressure, diabetes filter, physical activity, family history, age, and ethnicity[4]
- intervention: consisting of two elements:
  - communication of risk (through NICE-endorsed calculator tools)
  - risk management (through awareness raising, behaviour change, lifestyle management advice, preventive medication, referral for further management)

  The individual elements of the NHS Health Check intervention follow well recognised and evidence-based clinical pathways approved by NICE
- outcomes and evaluation: assessment of outcomes for those at high-risk, for those diagnosed with disease and those at low-risk. Reduction in morbidity, mortality, health inequalities. This includes continuous quality assurance of programme activity

PHE leadership of the programme

PHE is responsible for overseeing the NHS Health Check programme. As part of this leadership role, it has committed to strengthening the scientific rigour of the programme and developing a research strategy to support it.

PHE's actions with respect to this include:

- setting up an expert scientific and clinical advisory panel (ESCAP). The panel is responsible for reviewing emerging evidence and research needs, and promoting future research, development and evaluation of the programme. It also reviews and advises on future proposals for content change. The panel is the established route for reviewing the programme from a scientific and clinical perspective and advising on future change, in light of emerging evidence, evaluation, experience and clinical

[4] Public Health England, NHS Health Check Programme Best Practice Guidance. 2013 Oct.

www.healthcheck.nhs.uk/document.php?o=456

practice. The panel's terms of reference and membership are published on the NHS Health Check website[5]

- publication of PHE's 'NHS Health Check: our approach to the evidence', summarising the current case for action, the evidence base and the uncertainties that remain[6]
- research symposium (May 2014) to generate research and evaluation questions. Over 100 participants, including academics, local authority commissioners, clinicians and professionals from the voluntary sector
- active dissemination of best practice, including via the National Learning Network events and website

PHE's oversight of NHS Health Check also includes support for its delivery and implementation (through the NHS Health Check programme standards and the information governance and data flows guidelines) to bring a greater focus on quality and consistency.[7,8]

State of existing knowledge and literature

PHE assesses existing and emerging knowledge and academic research relating to the NHS Health Check programme, to ensure that we are identifying gaps and avoiding duplication in promoting future research.

As part of this effort, the NHS Health Check's ESCAP commissions a regular literature search to identify national and international evidence relevant to the NHS Health Check programme. The latest findings of that search are published on the NHS Health Check website.[9]

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[5] Public Health England, Expert Scientific and Clinical Advisory Panel Terms of Reference. 2013

www.healthcheck.nhs.uk/commissioners_and_healthcare_professionals/programme_governance/escap/

[6] Public Health England, NHS Health Check: Our Approach to the Evidence. July 2013.

www.healthcheck.nhs.uk/document.php?o=346

[7] Public Health England, NHS Health Check programme standards: a framework for quality improvement. February 2014.

www.healthcheck.nhs.uk/document.php?o=547

[8] NHS Health Check Information Governance and data flows. February 2014.

www.healthcheck.nhs.uk/document.php?o=603

[9] www.healthcheck.nhs.uk/commissioners_and_healthcare_professionals/programme_governance/escap/

Two small-scale independent studies on the NHS Health Check programme were commissioned by the Department of Health (DH) in 2012, through its policy research programme (PRP). The aims of these studies are to provide an early assessment of the programme outcomes since phased implementation began in 2009. These are being led by teams at Queen Mary's School of Medicine and Dentistry and Imperial College London.

Both studies are based on secondary statistical analyses of available NHS data. A number of general limitations with such data need to be borne in mind (eg, coding errors, under-diagnosis due to patient non-attendance at NHS appointments, limited availability of health outcome measures). The direct qualitative experience of NHS Health Check staff and/or patients is also out of the scope of the research projects. However, despite these recognised shortcomings, both studies will provide the first robust evaluations of the NHS Health Check since the programme's inception. There are also a number of other research projects, within both the PRP and National Institute for Health Research (NIHR) portfolios, that have wider relevance for different aspects of NHS Health Checks and related services.

It is important to note that in addition to these peer-reviewed academic research projects, there are multiple local evaluations of the programme being undertaken, primarily for the use of the local authorities that commission them – and that this activity is encouraged by PHE in an effort to foster a programme-wide culture of evaluation. These will also contribute to the overall understanding of the programme and PHE will analyse and synthesise results where possible, and help share the results among the wider NHS Health Check community. The majority of this work will not be published in peer-reviewed journals but will consider certain aspects of the programme in ways that will complement the academic studies, including: methods of increasing uptake, equity of access, the impact of motivational interviewing and behaviour change, patient experience and other programme outcomes.

PHE's research strategy

The NHS Health Check research priorities are informed by and consistent with PHE's overarching research and academic strategy, which is currently being developed. The core principle of this strategy is that research is not an end in itself, but a pragmatic exercise that supports delivery of public health by generating new knowledge and applying that knowledge for the public good. Good research must be translated effectively into improved and more efficient practice. Too much useful research is wasted through inadequate translation. A lot of potentially useful research never gets done for the lack of the necessary infrastructure or relevant research capacity.

PHE does not commission research and has no capacity or funding to invite tenders for research activity. That role was retained by DH and is exercised by the secretary of

state through the department and NIHR. But we believe PHE can still be an important catalyst for research, by partnering and sponsoring research and helping to shape a compelling agenda of researchable questions.

PHE has published a research strategy framework for consultation, with five strategic priorities:

1. Generate new knowledge to improve and protect health and bridge gaps in the research base
2. Build and share a high-quality infrastructure to enable research by PHE and others
3. Support and develop relevant research capacity in PHE and elsewhere
4. Drive translation of research into practice in public health
5. Communicate widely and openly about research and its contribution to improving and protecting health and wellbeing and reducing health inequalities

The research questions and priorities for the NHS Health Check programme that we detail below fall generally under the first strategic priority of generating new knowledge to improve and protect health.

Research priorities for NHS Health Check

In proposing the following research priorities for the NHS Health Check programme, this paper has drawn on:

- data gathered from the NHS Health Check research and academic symposium
- a further assessment of the research gaps, informed by the ESCAP literature review and the perspective of those charged with implementing and delivering the programme

The symposium, held in May 2014, brought together over 100 academics, local authority commissioners, clinicians and professionals from the voluntary sector. Through a series of group discussions and exercises, participants generated a wealth of research and evaluation questions.

In particular, the symposium was asked to consider four major areas:

1. Delivery and implementation of the programme (assessing and communicating risk, delivery models)
2. Outcomes (on behaviour change, on the burden of disease and disability, on risk factors)
3. Cost-effectiveness (impact of the programme on healthcare and wider societal/economic costs)
4. Health inequalities (including issues of equity and access)

Participants were asked to rank the questions which emerged from the day and the results of this exercise are shown in appendix A. A more detailed analysis of the outputs from the symposium can on the NHS Health Check website.[10]

In the research priorities set out below, we have sought to distil the major findings from the symposium, categorised according to the three key elements of the NHS Health Check programme (recruitment, assessment/intervention, outcomes). This list cannot be comprehensive but we hope that it captures the spirit and the general themes expressed by the community of learning we are starting to build around NHS Health Check.

Recruitment to an NHS Health Check

a) What are the most effective methods for inviting people to an NHS Health Check (such as a letter or a text)?
b) Should we, and can we, gather evidence on those who do not engage with NHS Health Check or do not attend?
c) Are the NHS Health Checks reaching those at greatest risk?
d) Would targeting of sub-populations (eg, high-risk, poor socio-economic groups) improve cost-effectiveness of NHS Health Check and what would be the effect on overall impact at population level?
e) Would inclusion of younger age group for certain population groups improve cost-effectiveness?
f) Is there equitable uptake of the programme and how can equitable uptake be achieved?
g) What are people's perceptions of the programme, how is this affecting uptake and how could perceptions be improved through marketing?
h) Can we learn from (and replicate) success of those areas delivering high volumes of invitations and uptake of NHS Health Check?
i) How can we apply behavioural insights to improve uptake?
j) How can we apply learning from screening programme methodologies to improve uptake?

[10] http://www.healthcheck.nhs.uk/commissioners_and_healthcare_professionals/national_nhs_health_check_events/nhs_health_check_research_and_academic_symposium_21st_may_2014_/

Delivering NHS Health Check (assessment and intervention)

a) How effective are different venues for delivering the programme (eg, pharmacy, GP surgeries)?
b) To what extent do components of an NHS Health Check reflect programme standards throughout the country?
c) Does heterogeneity of delivery affect cost-effectiveness?
d) Evaluation of existing and new methods of communicating risk. How does this affect patient activation?
e) Would performance monitoring improve effectiveness of programme?
f) Does effective training of providers translate into effective delivery of the programme?
g) What are the major barriers/facilitators for practitioners delivering the NHS Health Check (eg, training, leadership, incentives)?
h) Do high-risk people get referred?
i) Evaluation of different methods to activate behaviour change.
j) Is primary care effectively and efficiently following up and managing those identified as being at risk by the NHS Health Check?
k) What are the barriers and facilitators to engagement by clinicians, and what can be done to promote engagement?

Outcomes and evaluation

a) What are the outcomes for those who are low-risk, high-risk and diagnosed with disease?
b) What are the measurable objectives of the programme and how should they be evaluated?
c) Does the NHS Health Check programme lead to a reduction in CVD and non-communicable diseases?
d) Utility of proxy measures (such as behaviour change, reduced smoking) to assess effectiveness of programme?
e) What environments support behaviour change (role of social, physical, community environments)?
f) Has NHS Health Check reduced morbidity and mortality?
g) How has NHS Health Check affected health inequalities?
h) Has NHS Health Check saved money? Has it generated savings in secondary care?
i) Is there evidence of cost-effectiveness and value for money of NHS Health Check for different stakeholders (local authorities, GPs, CCGs, the NHS, individuals)?
j) How will cost-effectiveness of NHS Health Check be affected by future disease burden and changes in population behaviours?
k) What opportunities are presented by NHS Health Check to support other population-level strategies (for instance on alcohol or diabetes)?

Other considerations

The research priorities proposed above require a high-quality research infrastructure and a commitment to collaborate with others and communicate widely about research.

A research infrastructure relies on robust data collection and developing research capacity.

With respect to data, many stakeholders have commented on the need for better informatics and data quality, and in particular, the need to link record-level data on NHS Health Check in primary care with data on healthcare outcomes.

Through collaboration with the wide range of current and developing national audit programmes, NHS England, Health and Social Care Information Centre (HSCIC) and other partners, PHE's national cardiovascular intelligence network aspire to develop a national cardiovascular disease register. Where it is most efficient and effective, data will be shared securely between national agencies and audit programmes to provide a population wide view through from prevention, early diagnosis, treatment and care, to the end of life. As a matter of course, the data and information within the population register will be embedded in innovation and research. Early pilot data linkage projects that provide opportunities to link locally collected NHS Health Check data with wider national audit programme partners, should be explored.

Through the work of the NHS Health Check data, intelligence and information governance sub group, it is apparent that there is a consensus for the development of a national centralised collection system for the NHS Health Check programme. We need to ensure that we have consistency in the way that the NHS Health Check information has been recorded locally to facilitate local and national evaluation, and research requires data that are accurate and can be segmented (eg, according to gender, ethnicity).

PHE is already involved in work on a new data standard for the NHS Health Check programme which is due for discussion at the Independent Standards Assurance Service with a view to sign off by the Standardisation Committee for Care Information. PHE is also working with the HSCIC to guide the development of Care.data into an informatics solution that allows data to be extracted from primary care systems for this purpose (with appropriate data security and confidentiality safeguards). Consideration will also be given to working with the GP system of choice with a view to the potential development of national data templates in discussion with the HSCIC.

A number of other concrete suggestions have been made, including creating a register of ongoing studies as well as a managed research network to foster research partnerships and share results.

Research capacity provides the specific skills and expertise to evaluate the NHS Health Check programme. Suggestions to develop this capacity include: funded academics supported by PHE and research funders to develop grant proposals, training opportunities (research fellowships, PhD studentships) and professional development for public health, pharmacy and primary care professionals to undertake evaluations and work with academics on research projects. It is our aim to create a culture of research and evaluation at all levels and with all partners across this programme. PHE will encourage and work with those delivering the programme to seek constantly to measure, learn, innovate and improve.

In our efforts to meet the agenda set out here, we will encourage research from across the scientific disciplines and methodologies – including rigorous quantitative analysis, but also considering qualitative approaches, and looking to the social and behavioural sciences to understand the wider contexts that the programme operates within and to develop practical guidance that can be adopted by local teams. In addition, we will encourage research that considers not just the absolute population effectiveness of the programme, but work which looks to see the impact of the programme, and various approaches to delivering it, on health inequalities. We also encourage approaches that engage patients and the public in the research process, to understand their attitudes to and experiences of the NHS Health Check process – and seek to use their views to drive improvement.

PHE is committed to communicating widely and transparently in relation to the NHS Health Check programme and its evaluation. We will disseminate the results of relevant research and ongoing studies and support local authorities to engage locally with their communities and with local media.

Next steps

PHE, advised by ESCAP, is determined to base the NHS Health Check programme on good evidence. The priorities for research described here will help fulfil this commitment. By systematically identifying important research gaps, we will be in a better position to generate knowledge that serves to improve the programme. We will work with the community of research funders to develop capacity in this area and to see how we can help stimulate good quality research applications that might attract support. We would also hope that funders would consider specific calls for research in the areas identified in this prioritisation process.

This is a collaborative exercise. PHE will work with NICE, local authorities, strategic clinical networks and NHS England among many others to understand how best to share this new knowledge and translate it into practice.

PHE will continue to review the existing and emerging evidence in order to provide guidance to local authorities as commissioners of the programme and, where necessary, consider whether this evidence warrants adapting the programme in any way. In particular, we need to be alert to the risks of unintended consequences and the possibility that a population-wide prevention programme, such as NHS Health Check, may do harm. PHE will, of course, take rapid action should the evidence suggest that any component of the programme were harmful.

NHS Health Check presents us with an unprecedented opportunity to generate new knowledge on the effectiveness, and cost-effectiveness of a ground-breaking population-wide programme to prevent the leading causes of premature mortality in England. We welcome the contributions of the research community to further this aim.

Appendix A. Research and academic symposium: delegates' priority research questions

NHS Health Check research and academic symposium: delegates' priority research questions
• What are the most effective communication and delivery methods for engaging people with the greatest need?
• What is the actual performance of the current model based on existing data V the predicted model to identify key priorities for improvements?
• What difference does the NHS Health Check make to individuals and populations?
• Differences measured by surrogate outcomes? eg, JBS3, BMI, smoking, uptake
• What are the impacts in terms of costs and benefits on all stakeholders (eg, NHS England, clinical commissioning groups, local authorities, patients, etc) and how does this affect the delivery and procurement of the programme?
• How can we best ensure that those with the greatest risk receive the NHS Health Check?
• What are the barriers/facilitators to practitioners for delivering effective outcomes?
• Which models of delivery of the different components of the programme are most effective?
• What aspects of the programme could be delivered more cost effectively nationally?
• Exploring how cardiovascular disease risk is communicated and by whom, to understand the impact this has on behaviour change and outcomes at an individual level.