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Knowledge & Library Services (KLS) Evidence Briefing

What is the latest evidence on NHS Health Checks?

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Issue 4

What is the latest evidence on NHS Health Checks?

This briefing (issue 4) summarises the findings from research papers identified from the most recent Expert Scientific and Clinical Advisory Panel (ESCAP) literature search on NHS Health Checks (search dates: June 23rd 2017 – November 7th 2017) (1). It is presented in a summary format, using the three key research priorities of the NHS Health Check programme – recruitment, delivery and impact.

Key messages

- Eight relevant studies addressing at least one of the NHS Health Check research priorities were identified in the current ESCAP literature search (1)
- Attendees at an NHS Health Check were more likely to be non-smokers (2)
- 79% of respondents recalled dementia being mentioned in the NHS Health Check, and those attending a health check were more aware of dementia risk reduction (3)
- there was wide variation in how the dementia risk reduction component was delivered (3)
- in most deprived areas of Bristol, NHS Health Check invite rates did not meet the national expectation; incentive payments for invites did not always result in an actual check (4)
- skill sets required to deliver NHS Health Check in primary care were questionable; also practice staff do not have time to focus on the behaviour change aspect of the health check (4)
- underweight males or those with low body mass index (BMI) drank 30 units more of alcohol per week than other BMI groups, highlighting this as an important target group for cardiovascular disease (CVD) risk reduction (5)
- cholesterol levels were greater in 40-60 year olds, compared with over-60s (5)
- 81% of smokers were offered a smoking cessation intervention within the first year following the health check (2)
- more hypertension and type 2 (T2D) diabetes cases were detected in males than females, and more T2D cases were detected among those living in the most deprived area compared with those in the least deprived area (6)
- over 80% of participants feel they have benefited from an NHS Health Check; although the CVD risk score was poorly understood and interpreted differently (7)
- over 15 years the CVD cases prevented or postponed from the NHS Health Check Programme were modelled at 310 for current implementation of health checks, 870 for optimal implementation of health checks and 1740 for current health check implementation plus policies targeting salt, sugar, fruit and vegetables (8)
- total expected cost of using point of care testing (POCT) to deliver a routine NHS Health Check up to the point of CVD risk score presentation is lower than the laboratory-led pathway (9)

Evidence Briefings are a summary of the best available evidence that has been selected from research using a systematic and transparent method.

What doesn't this briefing do?
The findings from research papers summarised here have **not** been quality assessed or critically appraised.

Who is this briefing for?
It is designed for commissioners, providers and academics interested or involved in the NHS Health Check programme.

Information about this Evidence Briefing

The findings in this briefing come from the most recent quarterly NHS Health Check literature search which drew upon a literature search of the sources Medline, PubMed, Embase, Health Management Information Consortium (HMIC), Cumulative Index of Nursing and Allied Health Literature (CINAHL), Global Health, PsycInfo, the Cochrane Library, NICE Evidence Search, TRIP database, Google Scholar, Google, Clinical Trials.gov and the ISRCTN registry from June 23rd 2017 – November 7th 2017.

Eight highly relevant citations were used to produce this Evidence Briefing.

Background

In January 2017 ESCAP summarised the key findings of a rapid evidence synthesis conducted by RAND and the University of Cambridge (10, 11). The descriptive synthesis of quantitative data and thematic synthesis of qualitative data identified a total of 68 papers (from January 1996 to November 2016) that addressed at least one of six research questions posed by Public Health England (PHE).

ESCAP continues to identify evidence relevant to the NHS Health Check programme by producing a quarterly list of citations – the latest literature search is November 2017 (covering search dates June 23rd 2017 – November 7th 2017) (1). This briefing aims to translate the evidence from the NHS Health Checks section of the latest quarterly ESCAP literature search into a user-friendly summary format, in order to inform practice. The briefing is summarised under the three key elements of the NHS Health Check programme – recruitment, delivery and impact.

1. Recruitment

One research study addressed the question of who is having an NHS Health Check.

Attendees at an NHS Health Check were more likely to be:

- non-smokers - among men and women attending for the health check, smoking prevalence was 3.57% lower (95% CI 3.32% to 3.82%; P < 0.001) than in controls, in this population-based matched cohort study (2)

2. Delivery

Three studies addressed the delivery of NHS Health Checks.

The first assessed the feasibility of extending the NHS Health Check for 40-64 year olds to include a dementia risk reduction component (3). Key findings include:

- 79% of respondents recalled dementia being mentioned in the NHS Health Check
- the post NHS Health Check sample was more aware than the control sample of the concept of dementia risk reduction and more knowledgeable about the impact of different lifestyle changes on increasing the risk of developing dementia
- there was a wide variation in how the intervention was delivered within locations as well as between locations - to assess the effectiveness of different methods of delivering the dementia component, more research with a reduced number of variables is needed

The authors conclude that "*the research suggests that the delivery of the dementia component is feasible and has a positive impact on the knowledge and awareness of the general public around dementia risk reduction. There is no evidence to show that it has a direct impact on behaviour change in the short term…….the dementia component might possibly provide a nudge to behaviour*

> *change in the longer term but this would be hard to track and prove causality. The qualitative research also shows that the delivery of the dementia component can vary considerably……if the dementia component is to be rolled out the risk messaging needs to be clearly articulated to Health Care Professionals and training given around this messaging to ensure that the full impact of the component is realised*" p11

A needs assessment conducted in Bristol found evidence of gaps in current service delivery of NHS Health Checks, poor local intelligence and poor uptake of commissioned services for specific population groups (4). Key findings include:

- in the most deprived areas of the city invite rates did not meet the national expectation
- some practices have high invite rates and the conversion to uptake is poor, whilst others have high uptake rates against low invite rates
- current arrangements include an incentive payment for invite, often this does not result in an actual check
- patients and professionals reported that the skill sets required to deliver health checks in primary care was questionable.
- practice staff reported that they do not have time to focus on the behaviour change aspect of the health check
- take-up rates across the city are variable
- the low number of referrals to lifestyle services following a health check in practices where CVD prevalence and deprivation is high is unacceptable
- it is not possible to identify if patients are clinically followed up by GP after having a health check delivered by an alternative provider in the community

A cross-sectional study where NHS Health Checks were delivered in conjunction with Tottenham Hotspur football club in pop-up clinics in Haringey, was conducted in order to access hard-to-reach groups (5) – this study found that:

- physical inactivity was significantly linked to QRISK2, but BMI, total cholesterol and fruit and vegetable intake were not.
- low BMI or being underweight was linked to greater consumption of alcohol – underweight males drank 30 units more per week than other BMI groups, highlighting this as an important target group for CVD risk reduction
- cholesterol levels were greater in the 40-60 year old group, compared with over-60s

The authors state that this "*unique approach to the NHS Health Check has reported data in hard-to-reach people who may have gone undetected…..practitioners should use this data to understand the characteristics of similar boroughs and interventions, and should further highlight the importance of diet and physical activity importance when targeting hard-to-reach populations*" p396

3. Impact

Five papers addressed the impact of the NHS Health Check programme.

Among people attending an NHS Health Check:

- 81% of smokers were offered a smoking cessation intervention within the first year following the health check (2)
- a significantly greater number of hypertension and type 2 (T2D) diabetes cases were detected in male than female attendees (e.g. an additional 4.02%, 95% CI: 3.65% to 4.39%, and 2.08%, 1.81% to 2.35% male and female attendees were detected with hypertension respectively) (6)
- a significantly greater number of T2D cases were detected among attendees living in the most deprived area (1.60%, 1.23% to 1.97%) compared with those living in the least deprived area (0.79%, 0.52% to 1.06%) (6)
- no major differences in CVD risk management were observed between subgroups (6)
- over 80% feel that they have benefited from an NHS Health Check (7)
- some had feelings of unmet expectations arising from confusion about the purpose of the NHS Health Check (7)
- the cardiovascular risk score was poorly understood and interpreted differently among individuals with the same level of risk (7)

User-Smith et al. state that "*while participants were generally very supportive of the NHS Health Check programme and examples of behaviour change were reported, this study highlights a number of areas where improvements could be made. In particular, the finding that a number of patients were unaware of the programme or had misunderstood the extent and purpose of the NHS Health Check suggests that more proactive communications may be needed to raise awareness of the programme overall and that patients need additional clarity about the programme when being invited*" (7) p11

A modelling study (8) suggested that over 15 years the CVD cases prevented or postponed from the NHS Health Check Programme would be approximately:

- 310 (40–734) for continuing the current implementation of health checks (scenario A)
- 870 (327–1,397) for an optimal implementation of health checks assuming optimal coverage, uptake, treatment and lifestyle change (scenario B); and
- 1740 (815–2,939) for current health check implementation plus structural policies targeting dietary consumption of salt, sugar, fruit and vegetables (Scenario C)

Cost effectiveness of NHS Health Check:

- the probability of scenarios A and B (see above) being cost-effective by 2031 was 25% and 74% respectively, valuing each QALY at £20,000. Scenario C would become cost saving by 2030 (8)
- the total expected cost of using point of care testing (POCT) to deliver a routine NHS Health Check up to the point of CVD risk score presentation is lower than the laboratory-led pathway; also the laboratory-led pathway offers patients three times more opportunities to miss subsequent NHS Health Check-related appointments or to exit the care pathway compared with POCT pathway (9)

Compare: *Issue 2* of this NHS Health Check Evidence Briefing series outlined an economic evaluation that found NHS Health Check was highly cost-effective and associated with an incremental cost effectiveness ratio of £900/QALY

Summary table showing key information for the research studies included in this evidence briefing

Title	Aim	Design	Participants	Results
Alageel et al. 2017 *Impact of the Health Check programme on the provision of smoking cessation interventions in England.*	To evaluate uptake of the health check programme by smokers and the effect of the health check programme on delivery of smoking cessation interventions.	Population-based matched cohort study using primary care electronic health records in the Clinical Practice Research Datalink.	129,045 eligible participants received a health check, and 327,091 matched controls.	Among men and women attending for the health check, smoking prevalence was 3.57% lower (95% CI 3.32% to 3.82%; P < 0.001) than in controls. Smoking cessation interventions were offered to a higher proportion of health check recipients (difference 24.1%, 95% CI 23.85% to 24.62%; P < 0.001), with 81% of smokers being offered a smoking cessation intervention within the first year following of the health check.
Solutions Strategy Research Facilitation Ltd and Cornish and Grey Ltd 2017 *NHS Health Check 40-64 Dementia Pilot: Research Report.*	To evaluate the pilot and assess the feasibility of extending the NHS Health Check for 40-64 year olds to include a dementia risk reduction component.	Quantitative research with both a control group and a test group immediately post NHS Health Check, and qualitative research with the post NHS Health Check sample more than three weeks after their NHS Health Check.	Members of the general public aged 40–64 in the pilot locations of Birmingham, Bury, Manchester and Southampton.	The post NHS Health Check respondents saw the NHS Health Check as a good introduction to talk about risk reduction overall. 79% of respondents recalled the dementia component, although the ethnic minority sample was statistically significantly less likely to recall the dementia component (65% vs 84% in mainstream sample). Overall the research suggests that the delivery of the dementia component is feasible and has a positive impact on the knowledge and awareness of the general public around dementia risk reduction.

Title	Aim	Design	Participants	Results
Chappell 2017 *Health Needs Assessment-NHS Health Checks*.	To examine NHS Health Checks in the context of national and local policy and identify population groups who have high premature mortality prevalence rates across Bristol city	A needs assessment was conducted by the Adults and Older People's Strategic Public Health Team in Bristol City Council	-	Evidence of gaps in current service provision, poor local intelligence and poor uptake of commissioned services for specific population groups were identified. Current commissioned services were not always delivered in a way in which risk identification and reduction is central
Wilkinson et al. 2017. *Obesity and cardiovascular risk factors: results of a unique approach to NHS health checks*.	To evaluate health check data from an inner London borough.	A cross-sectional study	Haringey and Tottenham Hotspur Foundation paired up to conduct 3000 health checks on 40-74 yr olds at 25 locations outside of traditional GP surgeries, in the east of the Borough between March 2014 and July 2015.	The whole group data (n=2254) were analysed, comprising of 23.4% females (50.2±8.0 years) and 76.6% males (49.4±8.0 years). Alcohol consumption in males was significantly greater in the underweight compared to all other BMI groups. The underweight/normal BMI groups had significantly lower total cholesterol levels than the overweight/obese. Blood glucose levels were significantly lower in the underweight compared to overweight/obese. QRISK2 score was significantly lower in normal and underweight compared to overweight/obese males. Blood glucose levels and QRISK2 were significantly greater in the inactive groups compared to active.

Title	Aim	Design	Participants	Results
Chang et al. 2017 *Socio-demographic inequalities in the effectiveness of England's NHS Health Check*.	To compare NHS Health Check programme impact on: i) early detection of hypertension, type 2 diabetes and chronic kidney disease among population subgroups of age, sex and deprivation; and ii) management of CVD risk among high-risk population subgroups of age, sex, and deprivation	Retrospective electronic medical records from the Clinical Practice Research Datalink were obtained. Programme impact for each subgroup was estimated using a difference-in-differences matching analysis that compared changes in outcome over time between attendees and non-attendees.	A randomly selected sample of 138,788 patients aged 40–74 years, without known CVD or diabetes, and were registered with 462 practices between 2009-2013.	21.4% of the study population attended a Health Check. A significantly greater number of hypertension and T2D incident cases were detected in male than female attendees (e.g. an additional 4.02%, 95% CI: 3.65% to 4.39%, and 2.08%, 1.81% to 2.35% male and female attendees were detected with hypertension respectively). A significantly greater number of T2D incident cases were detected among attendees living in the most deprived area (1.60%, 1.23% to 1.97%) compared with those living in the least deprived area (0.79%, 0.52% to 1.06%). No major differences in CVD risk management were observed between subgroups.

Title	Aim	Design	Participants	Results
Usher-Smith et al. 2017. *Patient experience of NHS health checks: a systematic review and qualitative synthesis.*	To review the experiences of patients attending NHS Health Checks in England.	A systematic review of quantitative and qualitative studies with a thematic synthesis of qualitative studies, involving an electronic literature search with no language restriction and manual screening of reference lists of all included papers	-	20 studies met the inclusion criteria, 9 reporting quantitative data and 15 qualitative data. There were consistently high levels of reported satisfaction in surveys, with over 80% feeling that they had benefited from an NHS Health Check. Data from qualitative studies showed that the NHS Health Check had been perceived to act as a wake-up call for many who reported having gone on to make substantial lifestyle changes which they attributed to the NHS Health Check. However, some had been left with a feeling of unmet expectations, were confused about or unable to remember their risk scores, found the lifestyle advice too simplistic and non-personalised or were confused about follow-up.

Title	Aim	Design	Participants	Results
Collins et al. 2017 *The cost-effectiveness and equity of the NHS health checks cardiovascular disease prevention programme: a microsimulation using real-world data from a deprived northern city*.	To determine whether Health Checks (HCs) are cost-effective and equitable in a city with high levels of deprivation and cardiovascular disease	A previously validated microsimulation policy model was calibrated to Liverpool demographics, risk factor exposures and CVD epidemiology. Three fifteen year scenarios from 2017 to 2031 were modelled A) continuing the current implementation of HCs; B) an optimal implementation of HCs assuming optimal coverage, uptake, treatment and lifestyle change; C) combining scenario A with structural policies targeting dietary consumption of salt, sugar, fruit and vegetables	-	The model suggested that over 15 years the CVD cases prevented or postponed would be approximately 310 (40–734) for scenario A, 870 (327–1,397) for scenario B, and 1740 (815–2,939) for scenario C. Cumulative discounted net costs and quality-adjusted life years (QALYs) gained for the three scenarios respectively would be: +£2.1 m (£1.5 m – +£4.8 m) and +90 QALYs (-124 – +376) for A; +£1.4 m (£6.1 m – +£6.6 m) and +434 QALYs (-76 –+1,133) for B; £16.9 m (£33.2 m – £5.9 m) and +2,871 QALYs (+1,355 –+4,830) for C The probability of scenarios A and B being cost-effective by 2031 was estimated at 25% and 74% respectively, valuing each QALY at £20 000. Scenario C would become cost saving by 2030.
El-Osta et al. 2017. *Does use of point-of-care testing improve cost-effectiveness of the NHS Health Check programme in the primary care setting? A cost-minimisation analysis*.	To determine if use of point of care testing (POCT) is less costly than laboratory testing to the National Health Service (NHS) in delivering the NHS Health Check (NHSHC) programme in the primary care setting.	Observational study and theoretical mathematical model with microcosting approach. Data was collected on NHSHC delivered at nine GPs (n=7 using POCT; n=2 not using POCT).	Nine GPs with a combined list size of 71 500 patients were recruited from four Clinical Commissioning Group localities in Northwest London	Total expected cost of using POCT to deliver a routine NHS Health Check in the primary care setting up to the point of CVD risk score presentation is lower than the laboratory-led pathway with savings of 29 per 100 invited patients.

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