Public Health England

Protecting and improving the nation's health

NHS Health Check commissioning: Review of commissioner's current and potential use of weighted financial remuneration

February 2018

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Executive summary

There is variability in the remuneration structures and value across local authorities delivering NHS Health Checks, with authorities using the flexibility of the programme to drive innovation in how it is delivered. This project sought to review the evidence around the use of weighted remuneration for NHS Health Checks to aid commissioners in the design of their contracts to maximise impact of the NHS Health Check programme on population health and reducing health inequalities.

Weighted financial remuneration for NHS Health Checks is a payment structure which is tiered, based upon pre-agreed patient definition. For example a base payment of £20 per NHS Health Check completed by a provider, with an enhanced payment of £35 per check completed on patients from deprivation quintile 1 (most deprived).

This work involved a review of the literature, a national survey and a series of semi-structured interviews to collate evidence on the value of a weighted remuneration structure for NHS Health Checks and found the following:

The review of the literature found a small number of papers describing case studies where weighting remuneration to providers showed improvements in uptake of NHS Health Checks. Overall, the use of weighted remuneration for NHS Health Checks has weak evidence and remains largely under researched area. Results from the survey found that few local authorities are currently using weighted remuneration for NHS Health Checks, with the most common remuneration being based on payment per activity. Content collated from a series of semi-structured interviews described how weighted remuneration is used and detailed how it is adaptable to different population demographics.

The use of weighted remuneration to target NHS Health Checks has potential to have low, or potentially no, additional cost and can successfully target checks to priority groups within a population. Possible unintended consequences included practices withdrawing from contracts, unanticipated overspend and reduced total uptake, which should be considered when designing remuneration structures. The use of weighted remuneration for NHS Health Checks should be explored by commissioners to assess if it can be used effectively, and evaluated specifically in its potential to reduce health inequalities.

Recommendations:

- Consider using weighted remuneration to incentivise providers of NHS Health Checks to prioritise individuals who are more likely to be at risk of cardiovascular disease
- Use local population data and evidence to inform design of any weighted remuneration structure
- Use procurement tools to facilitate changes to contracts
- Work collaboratively with interested stakeholders
- Support and engage with providers

1.0 Introduction

In 2009, the Department of Health introduced the NHS Health Check programme in England. It is a universal population-based programme, involving a cardiovascular risk assessment and management programme for all adults aged 40–74 years (every 5 years) designed to reduce the incidence of major vascular disease events by preventing or delaying the onset of diabetes, heart and kidney disease and stroke[1]. It is a national programme, delivered locally in a way that best suit the needs of local populations[2].

Ensuring a high percentage of those offered a NHS Health Check actually receive one is key to optimising the clinical and cost effectiveness of the programme. This is especially important for populations with the greatest health needs and will impact on the programme's and local area's abilities to address health inequalities.

Local Authorities have flexibility on how and who they commission to provide NHS Health Checks and what locations are used. The tests and measurements however, are standardised to help ensure the safety, quality and effectiveness of the programme. Equally, it is key that the clinical actions taken at certain thresholds are the same, to assure a systematic and uniform offer across England and to maximise the public health impact of the programme.

Public health commissioners with the support of their local authority's procurement and legal experts make local commissioning decisions about the NHS Health Check programme. Public Health England (PHE) publish the programme's best practice guidance[1] to support both commissioners and providers in securing the delivery of a high quality service that meets the requirements of the Local Authorities Regulations 2013[3].

1.1 Context

In 2015 Public Health England[4] identified a series of research recommendations following a multiagency symposium in 2014. This project contributes to a number of these, most significantly:

- Is there equitable uptake of the programme and how can equitable uptake be achieved?
- How can we apply behavioural insights to improve uptake?
- Would targeting of sub-populations (e.g., 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?
- Evaluation of different methods to activate behaviour change

Financial incentives can be effective in motivating people to perform incentivised actions, if the incentive is meaningful and outweighs the inconveniences that a change in behaviour requires. This effect is reliant on the incentive remaining meaningful and there being sufficient scope for the individual to change their behaviour[5]. The design of

an incentive is therefore a key consideration and such techniques are often most effective when used alongside devoted measuring and monitoring activities[6].

Commissioners have the ability and experience of using financial incentives, or indeed disincentives, to influence the behaviour of providers and their delivery of services[6,7]. In turn, providers changing their behaviour can affect the costs they incur and the quality of care delivered[8]. Remuneration structures are thus a process that can be designed to influence the achievement of objectives such as improved quality, efficiency and activity, specifically being useful at the margin to encourage good professional norms and practice[5]. However, it has been noted that capability to respond to incentives may depend on practice size and existing infrastructure (e.g. staff numbers), with smaller practices sometimes unable or unwilling to take on upfront costs, with a dependence on recouping costs based on predicted performance[7].

There is variability in the payment structures and amounts across different areas delivering NHS Health Checks[9,10] with local authorities using the flexibility of the programme to drive innovation in how it is delivered[11]. It has been proposed that an approach that prioritises patients with the greatest health needs could be used effectively manage those at highest risk[12,13].

2.0 Methodology

2.1 Aim

To understand whether weighting financial remuneration to NHS Health Check providers can affect the demographics of people taking up the offer of a check compared to other types of payment.

2.2 Research questions

a. Does weighting financial remuneration to NHS Health Check providers affect the number and demographic of people having an NHS Health Check?
b. Can weighting financial remuneration to NHS Health Check providers increase take-up among the poorest and highest risk communities?
c. What financial remuneration weightings are currently used by local authorities with providers?
d. Is there a threshold at which financial weighting affects take-up?
e. Does any effect from weighting financial remuneration vary across different geographies or between different eligible population sizes?
f. What are the unintended consequences of weighting financial remuneration?

2.3 Methods

A project steering group was established with membership from clinical leads, national programme leads and local authority commissioners (appendix A). The steering group developed the Project Initiation Document and contributed to the design and delivery of the project.

Systematic literature review

A narrative systematic literature review was completed in April-Sept 2017 to address research questions (a) (b) and (c). The search strategy used is contained in appendix B.

Healthcare Databases Advanced Search was used to search Embase, Medline, HMIC, Health Business Elite and Cinahl. Titles and abstracts of papers were screened by two reviewers to assess if the papers met the inclusion criteria by being based in the UK, specific to the intervention of NHS Health Checks and include an element of financial inventive. No restrictions were set on the searches to identify all possible relevant literature.

Additionally, all (158) papers in the library database used by PHE to inform the Expert Scientific and Clinical Advisory Panel (ESCAP) for NHS Health Checks as of September 2017 had their

full text reviewed using the same inclusion criteria, which lead to two additional papers being included.

Once identified, the seven full text articles were quality reviewed using the appropriate appraisal checklist.

Survey

Surveys were developed using Select Survey™, an online survey management system, to address research questions (c) (d) and (e). There were two surveys, one for NHS Health Check commissioners, and one for NHS Health Check providers. The survey links were circulated to PHE Centre Leads for NHS Health Checks, for onward circulation to local authority commissioners and providers, with a four week window for completion and reminders issued during this period.

The surveys were formed of two sections; section one capturing current practice, section two collecting individuals agreement/disagreement with a series of behaviourally designed questions to identify drivers of behaviour, mapped to the COM-B framework (see section 2.4).

The behavioural questions were ranked on a Likert scale and coded: 1 (strongly agree) to 5 (strongly disagree), where lower mean scores indicated higher levels of agreement and higher mean scores indicate higher levels of disagreement. Analysis was based on two comparison groups; weighted remuneration and all other remuneration types.

Statistical analysis was run to determine whether there were any statistically significant differences between the two comparison groups mean scores for Capability, Opportunity, and Motivation (COM-B). Independent T-tests were run on all components to determine whether there were significant differences in scores between the two groups. Homogeneity of variances was assessed by Levene's test of equality of variances.

Interview

Semi-structured telephone interviews were conducted on a sample of survey respondents who reported to currently use weighted financial remuneration to address research questions (a) (b) (d) and (f). Case studies were written up as examples of practice.

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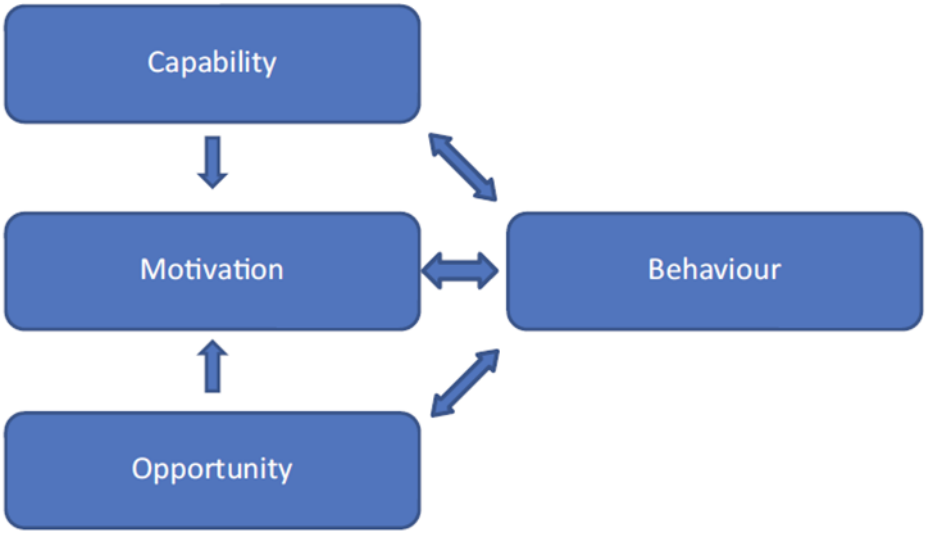
2.4 Theoretical framework

If a desired behaviour is not occurring (or an undesirable behaviour occurring) then an analysis of the determinants of the behaviour will help to define what needs to shift in order for the desired behaviour to occur (or the unwanted behaviour to cease). The COM-B model shown in Figure 1 has been developed as part of a larger system of behaviour shown in Figure 2 called the Behaviour Change Wheel (BCW)[14,15] which is designed to help intervention designer's move from a behavioural analysis of the problem to intervention design using the evidence base.

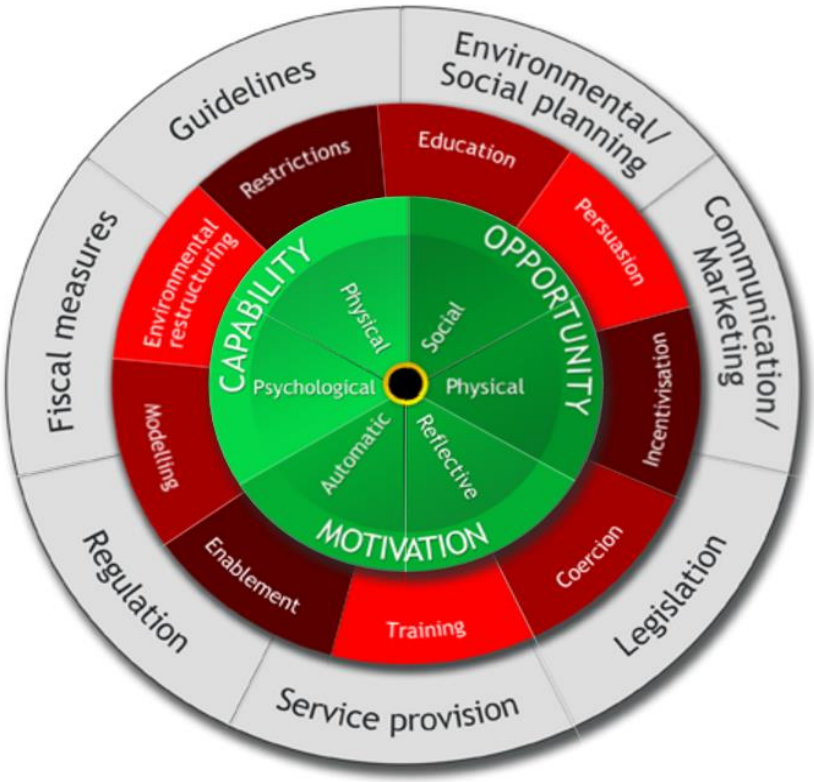
Figure 1. COM-B model[14]



The COM-B model proposes that for someone to engage in a particular behaviour (B) at a given moment they must be physically and psychologically capable (C) and have the social and physical opportunity (O) to do the behaviour and, in addition, want or need to do the behaviour more than any other competing behaviours at that moment. This inclusive definition of motivation (M) covers basic drives and automatic processes such as habit and impulses as well as reflective processes such as intention and choice.

The Behaviour Change Wheel (BCW) was developed from 19 frameworks of behaviour change identified in a systematic literature review. It consists of three layers; the hub identifies the sources of the behaviour that could prove fruitful targets for intervention. Surrounding the hub is a layer of nine intervention functions to choose from based on any particular COM-B analysis undertaken. The outer layer, the rim of the wheel, identifies seven policy categories that can support the delivery of these intervention functions.

Figure 2. Behaviour Change Wheel[14]



Financial incentives can be designed in ways to incentivise specific behaviours. They can be designed to increase general uptake e.g. patient receives £5 voucher for having a check; or to increase uptake in specific groups; e.g. provider receives higher payment for checks on patients in minority ethnic groups. Using financial incentives in this context to encourage the targeting of the service may be relevant to not only increasing uptake but also equity of access[16] to NHS Health Checks.

3.0 Results

3.1 Literature review

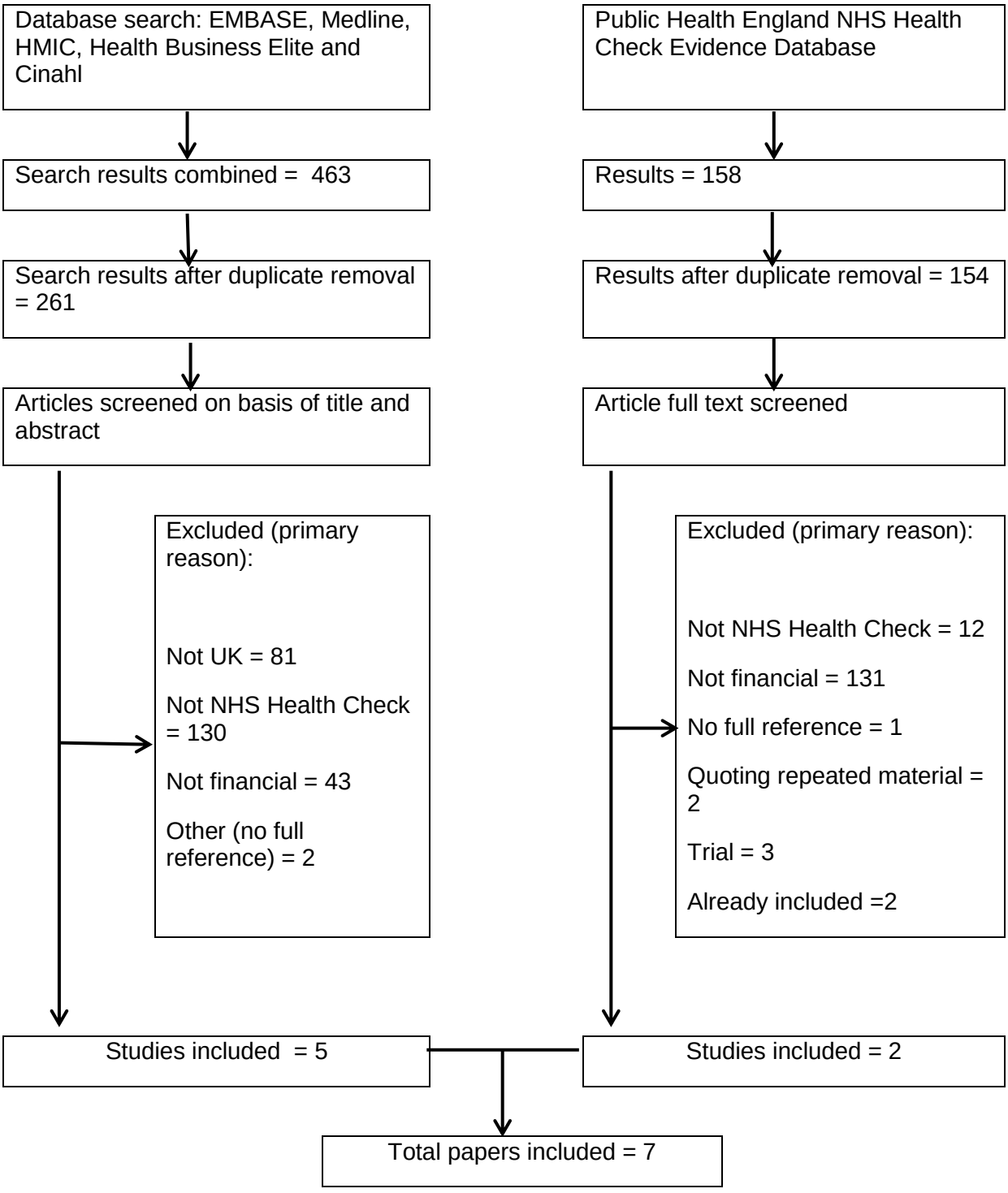
Seven papers were identified through the review (appendix C). Of those identified few had high methodological rigour, with the most common methods reported being case study (2) [23,24] and qualitative (2)[21,22], and just one randomised controlled trial[17], however this study focussed the financial incentive at the patient rather than the provider.

Much of the research reviewed was focussed on the process of completing an NHS Health Check, the population benefit of the programme or the use of patient focussed interventions to increase uptake. A selection of papers discussed the benefit of targeting checks at high risk groups[11,13,18,19,20], however there were few which referred to financially incentivising this approach. Research from London[9] described how some local authorities used risk stratification to inform invitation processes, with one local authority (City and Hackney) applying a tiered payment based upon QRisk scores identified during an NHS Health Check. The risk stratification used by Tower Hamlets and City and Hackney local authorities estimated the patients CVD risk based on their medical record, and allowed practices to invite those at highest risk first. The payment tiers used were £12, £27 or £44 depending on whether the patient 10 year CVD risk (QRisk) was 0-9%, 10-19% or 20% or more.

Feedback from GPs on the topic of NHS Health Checks[21] reported how some patients need more time and that a differential payment based on patient characteristics may be a way to address this, with one paper[22] reporting that commissioners are using such approaches with contracted providers of NHS Health Checks. Two papers[23,24] detailed the success of such schemes in practice, however both of these were case study reports, a low quality methodology on which to base conclusion.

Targeted payment based upon uptake rates was shown that it can be effective[23]; with one paper suggesting that contract management at a commissioner/provider level can achieve greater performance of programmes. This was reiterated in work from Birmingham[24] which identified how high levels of uptake were possible in areas of high deprivation when remuneration is optimally structured, again using a target based approach and additionally asking GPs to target ‘hard to reach’ patients. Such public health programmes are inevitably multi-faceted, and as such it is hypothesized that financial incentives alone may not lead to increases in uptake[25] proposing that their impact should be more broadly assessed through wider research.

Figure 3. Document flow diagram of literature review into weighted remuneration for NHS Health Checks



Summary

Where evaluated, universal incentivisation for patients to attend an NHS Health Check did not translate to increased uptake of checks[17], however there are a small number of papers describing case studies where weighting remuneration to providers has shown improvements in overall uptake of NHS Health Checks.[9,23]

Overall, very little evidence was found relating to using financial incentives and weighting of remuneration to increase uptake in priority groups of NHS Health Checks. It was recognised that certain patients require extra effort on the part of the practice, (additional staff time) and that enhanced payments may be an appropriate way to account for this, as well as an example of how cardio vascular disease (CVD) risk (using QRisk score identified during a check) can be used to based payment tiers on[9].

3.2 Survey

The commissioner survey had 62 complete responses across 152 local authorities (13 incomplete responses were received where individuals exited the survey before submitting their answers), representing a 40% response rate.

Table 1. Survey responses by Public Health England region

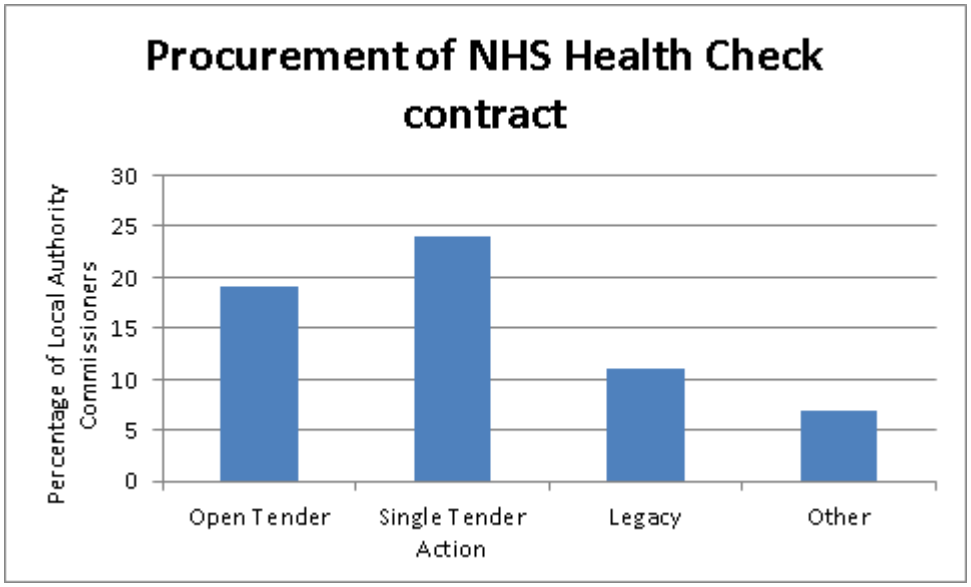
PHE Centre	Number complete responses / number of local authorities (incomplete responses)	Response rate
North East	0/12	0%
Yorkshire and Humber	11/15 (1)	73%
North West	11/23 (3)	48%
West Midlands	8/ 14 (2)	57%
East Midlands	5/9	56%
East of England	3/12 (1)	25%
South West	8/16	50%
South East	10/18 (1)	56%
London	6/33 (5)	18%
Total	**62 (13)**	**40%**

The provider survey had two complete responses, (67 incomplete responses were received). The low response rate to this version of the survey lead to the decision not analyse the data as it lacked responses to draw robust conclusions.

Survey findings part one: Current practice

The most common method of procurement for NHS Health Checks was single tender action (24, 39%), followed by open tender (19, 31%). Some areas (11, 18%) were using legacy service specifications following the transition of public health to local authorities in 2013. Other methods included the Clinical Commissioning Group (CCG) working with GP practices or federations either directly or through quality contracts.

Figure 4. Commissioning method used by NHS Health Check commissioners as reported in survey (2017)



Examples of each type of remuneration were provided in the survey to illustrate the methods.

The most common time that remuneration structures were introduced was at contract start (55, 89%), four (6%) using a predefined review point and two (3%) introducing new structures at an ad hoc time using contract variations. There was not a common method used for those areas using weighted remuneration, with the 10 areas awarding their contracts as follows: four used open tender, four used single tender actions and one was using a legacy document (one non-response).

Remuneration types

Remuneration types were defined as:

Fixed amount
A fixed amount of payment for the term of the contract.

Activity based
Payment linked to activity e.g. payment per completed check.

Target
Payment linked to achievement of specific targets e.g. payment only made when target uptake percentage achieved. These targets may be quarterly or annual and may relate to invites or completed checks.

Weighted
Payment linked to patient characteristic e.g. GP gets paid an enhanced payment for all NHS Health Checks completed on patients from a Black Minority Ethnic (BME) group. This category was the method of primary interest, where remuneration is weighted based upon pre-defined definitions.

Table 2. Remuneration type used by commissioners with their main provider of NHS Health Checks

Remuneration type	Frequency	Percent (%)
Fixed Amount	8	12.9
Activity Based	27	43.5
Target	0	0
Weighted	2	3.2
Combination *excluding* weighted remuneration	17	27.4
Combination *including* weighted remuneration	8	12.9
Total	62	100

Fixed amount

There were eight areas that reported using a fixed amount of remuneration in their contract.

Activity based

There were 27 areas that reported to use purely activity based remuneration. Where figures were provided, payment rates were as follows:

- *Invites*: the amount ranged from £1-5 per invite, with a mean of £2.36 (n=19)
- *Checks*: range of £15-50, with a mean of £24.90 (n=24)
- *Referrals*: One area paid £2 for onward referral to health improvement services (n=1)

Target

No areas reported using purely a target based remuneration.

Where targets were used with other remuneration structures, 14 areas use annual targets, eight use quarterly targets. Examples of target payments include annual targets set for uptake rate, resulting in a one-off bonus if target is met.

More complex targets used threshold for targets for individual or clusters of general practices, e.g. 55% uptake £250 bonus, 65% uptake £350 bonus and 75% uptake rewards £500 bonus for each practice.

The final type of target used was where practices were paid a set amount per check up to an uptake threshold, after which payment amount increases e.g. when a practice has completed a NHS Health Check on 50% of their eligible population the price per a check increases from £25 to £32.50.

Weighted

There were two areas reporting to use purely weighted remuneration and eight who use it in combination with other methods. These ten areas are described in more detail in Section 4.

The most common characteristic used to determine remuneration tiers was patient deprivation. The majority of areas used a combination of characteristics to define their 'priority' population.

Table 3. Types of patient characteristic used to determine remuneration of NHS Health Checks

Patient characteristic	Number of local authorities
Deprivation	5 (3 used as sole characteristic)
CVD risk score	3
Ethnicity	3
Severe mental illness registration	2
Learning disability registration	2
Clinical history	1
Carer register	1 (sole characteristic)
Outcome of check (remuneration is determined retrospectively)	1

Table 4. How the remuneration structure has affected the total number of offers of NHS Health Checks

Current remuneration type	Q. Since it has been introduced, how has the current payment structure affected the total number of OFFERS made?				Total number of LAs
	No Change	Increased	Decreased	N/A	
Fixed	2 (25%)	1 (12.5%)	1 (12.5%)	4 (50%)	8
Activity	7 (28%)	4 (16%)	5 (20%)	9 (36%)	25
Weighted	1 (50%)	1 (50%)	0	0	2
Combination EXCLUDING weighted	5 (33.3%)	5(33.3%)	0	5(33.3%)	15
Combination INCLUDING weighted	1 (12.5%)	2 (25%)	2 (25%)	3 (37.5%)	8
Total	16 (27.6%)	13 (22.4%)	8 (13.8%)	21 (36.2%)	58*

**Missing values for Activity (2) and Combination excluding weighted (2)*

Most areas reported that the payment structure had not changed the total number of offers (invites) of NHS Health Checks.

Table 5. How the current payment structure has affected the total number of completed NHS Health Checks

Current remuneration type	Q. Since it was introduced, how has the current payment structure affected the total number of COMPLETED CHECKS?				Total number of LAs
	No Change	Increased	Decreased	N/A	
Fixed	2 (25%)	1 (12.5%)	1 (12.5%)	4 (50%)	8
Activity	7 (28%)	5 (20%)	4 (16%)	9 (36%)	25
Weighted	1 (50%)	0	1 (50%)	0	2
Combination EXCLUDING weighted	2 (13.3%)	8 (53.4%)	2 (13.3%)	3 (20%)	15
Combination INCLUDING weighted	0	3 (37.5%)	2 (25%)	3 (37.5%)	8
Total	12 (20.7%)	17 (29.3%)	10 (17.2%)	19 (32.8%)	58*

**Missing values for Activity (2) and Combination excluding weighted (2)*

Most areas reported that the payment structure chosen had increased the number of completed NHS Health Checks.

Table 6. How the current payment structure has affected uptake of NHS Health Checks

Current remuneration type	Q. How has the current payment structure affected UPTAKE of checks?				Total number of LAs
	No Change	Increased	Decreased	N/A	
Fixed	3 (37.5%)	1 (12.5%)	0	4 (50%)	8
Activity	9 (36%)	4 (16%)	4 (16%)	8 (32%)	25
Weighted	1 (50%)	0	0	1 (50%)	2
Combination EXCLUDING weighted	4 (26.7%)	2 (13.3%)	2 (13.3%)	7 (46.7%)	15
Combination INCLUDING weighted	0	2 (25%)	2 (25%)	4 (50%)	8
Total	17 (29.3%)	9 (15.5%)	8 (13.8%)	24 (41.4%)	58*

**Missing values for Activity (2) and Combination excluding weighted (2)*

Most areas reported that the payment structure chosen had not changed the uptake of NHS Health Checks.

Free text comments from the survey captured that five (8%) areas stated that the payment amount used has affected the demographics (more checks in priority groups) of those receiving checks, three of which use weighted remuneration.

Commissioners reported that since introducing weighted remuneration total uptake figures may not have changed, but more checks are being delivered to people within priority groups (living in most deprived areas (1), or in younger age groups (1)).

It was reported that the additional data collected associated with the remuneration allows commissioners to review how the checks are being targeted to higher risk groups (2).

Survey findings part two: Drivers of commissioner behaviour

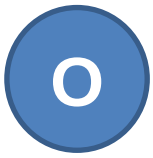
Analysis of the behavioural questions, compared responses from commissioners currently using weighted remuneration (either solely or in combination with other methods) to those using all other remuneration methods.

All responses were included in the analysis. A Likert scale 1 (strongly agree) to 5 (strongly disagree) was used, were lower mean scores indicated higher levels of agreement and higher mean scores indicate higher levels of disagreement.

Table 7. Mean scores of capability, opportunity and motivation as drivers of behaviour for commissioners using weighted remuneration and commissioners using other payment types.

	What payment type do you use with your CURRENT provider?	**N**	**Mean**	**Standard Deviation**	**Standard Error Mean**
Capability	Other	47	2.68	.585	.085
	Weighted	10	2.39	.437	.138
Opportunity	Other	42	2.80	.538	.083
	Weighted	9	2.43	.375	.125
Motivation	Other	39	2.69	.364	.058
	Weighted	9	2.31	.216	.072

Capability: There was homogeneity of variances, as assessed by Levene's test for equality of variances (p=.315). The 'other' payment group mean (M=2.68) score was **not significantly larger** than the weighted remuneration group (M=2.39), M=.295, SE=.196, t(55)=1.503, **p=.138.**



Opportunity: There was homogeneity of variances, as assessed by Levene's test for equality of variances (p=.315). The 'other' payment group mean (M=2.80) score was **not significantly larger** than the weighted remuneration group (M=2.43), M=.369, SE=.189, t(49)=1.954, **p=.056.**

Motivation: There was homogeneity of variances, as assessed by Levene's test for equality of variances (p=.138). The 'other' payment group mean (M=2.69) score **was significantly larger** than the weighted remuneration group (M=2.31), M=.373, SE=.127, t(46)=2.947, **p=.005.**

3.3 Semi-structured interviews

Nine of the ten areas who use weighted remuneration agreed to be contacted to provide further information, and five of these areas consequently agreed to providing a case study: Brighton and Hove, Cornwall, Wigan, Hull and Nottingham local authorities.

Copies of the case studies are accessible via: www.healthcheck.nhs.uk

Table 8. Description of weighted remuneration used by those areas interviewed

Local Authority	Remuneration details
Cornwall	*Invite based payment*: £1 per individual if they were: on anti-psychotic medication, have poly-cystic ovarian disease, are asian or other ethnic group, or a smoker. *QRisk stratified payment:* Based upon the QRisk score of the check payment was set up as follows: Low risk (<10% QRISK2 score)£9.80 Moderate risk (between 10-19.9% QRISK2 score) £42 High Risk (20% & above QRISK2 score) £52 *Disease identification payment*: £10 per review for each individual previously identified >20% but not on a disease register or statin, with previously undiagnosed diabetes, high blood pressure, atrial fibrillation or chronic kidney disease (payment per disease). £5 per individual identified within the non-diabetic hyperglycaemic range and considered for referral to the National Diabetes Programme programme or weight management
Brighton and Hove	Priority criteria: patients in most deprived quintile (quintile 1). Enhanced payment: £35 Base payment: £26.50 Additional payments: £3 per invite £2 for referral to health improvement services
Nottingham	Priority criteria: Estimated CVD risk score (of greater than 10%), learning disability or severe mental illness registration. Enhanced payment: £35. Base payment: £6.

Hull	Priority criteria: CMI (common mental illness); Ethnicity; Deprivation (the eight most deprived Wards of the City) Enhanced payment: £30. Base payment: £20.
Wigan	Age based payment: Patients Aged 40-49: £14.50 Patients Aged 50-59: £13.50 Patients Aged 60-74: £11.00

Impact of weighting the financial remuneration on uptake among high risk communities

Cornwall Council reported that since introducing weighted remuneration offers of checks were lower in first year, with uptake remaining stable at about 50%. Of those receiving checks the average QRisk score increased from 6-7% to a higher 10-11%. The majority of NHS Health Checks were provided to individuals under 65, but most of those found to be high risk were aged over 65. It was mostly women accessing NHS Health Checks, although 80% of the high risk patients identified were men.

A health equity audit in Brighton and Hove has shown that since introducing weighted remuneration linked to patient deprivation, although uptake of NHS Health Checks did not significantly change, more checks were delivered to people living in the most deprived quintiles of the City.

In Q1 2017/18 compared to Q1 average, Hull saw a 12% increase in total uptake of NHS Health Checks. Ethnicity was a priority characteristic under the new remuneration, and results found that there was a 10% increase in the number of BME patients receiving a NHS Health Check in the first quarter since using the new approach. Overall the proportion of checks completed on priority patients was greater than the general population in every quarter since the remuneration was introduced (four quarters worth of data at time of reporting).

Nottingham initially noted a drop in uptake coupled with an increase in invites in the first quarter when introducing weighted remuneration. It was hypothesized that this was because it was the harder to reach population that were being prioritised for invitations, with the trend reversed by Q2 with both invite and uptake rates increasing both universally and in priority groups.

Designing the remuneration structure

Lower tiers of payment were usually £6-10, higher tiers £30-52. When setting payment tiers, commissioners reported that the lower payment should at least cover the resources used in inviting and completing a check. One local authority proposed nil payment for patients not in a priority group, but response from primary care was that this was a disincentive that outweighed the possible motivation associated with the higher payments, and would lead to disengagement in the programme as a whole.

Rather than a threshold effect, the key element of the remuneration acting as a true incentive was reported to be the differential between the higher and lower payment, and making the higher payment more than what was offered previously per check (where a set amount was used per check previously).

Consultation with stakeholders was identified by all areas as a key aspect of successful design and implementation. Early engagement, explaining the rationale behind the remuneration approach and expected outcomes were key messages that commissioners recommended were discussed. Being accessible for regular communication to support practices was also found to be beneficial, rather than just communicating when there was a specific action required.
The weighted payments can be coupled with targets, with Wigan setting uptake targets of each age range, as well as requiring practices to deliver 20% of checks outside the hours of 0900-1700, to facilitate working age patients to attend their NHS Health Check.

Implementation of the remuneration structure

Commissioners reported that data was important to inform them of how the programme is performing, providing an early warning system if activity was being negatively impacted.
In Cornwall, the commissioner introduced the requirement for practice's to produce their own practice strategy, identifying how many people they plan to invite/check over the period of a year. Information from these strategies was used as a mechanism to inform the commissioner of planned activity and spend.

In four areas, the new remuneration was brought in as part of the recommissioning cycle, and introduced with a new contract/service specification. However it was shown that contract variations can be used effectively to introduce the new remuneration scheme mid contract term, with Nottingham using a contract variation to implement weighted remuneration.

Data collection and reporting was noted to be an important element of successful implementation of weighted remuneration, and some commissioners revised contracts with their Commissioning Support Unit (CSU) or software providers to ensure that the enhanced reporting was in place to allow full commissioner oversight of activity and demographic information.

Variation of impact across different geographies or between different eligible population sizes

There were examples where the introduction of weighted remuneration acted as a perverse incentive, whereby practices with less deprived populations withdrew from the NHS Health Check programme following the introduction of weighted remuneration, potentially due to the lack of possible financial gain.

Additionally, it was reported that the financial incentive was effective with practices where there was potential to gain improved financial benefit, with practices previously not delivering checks signing up to the programme since a weighted remuneration structure was introduced.

Where the revised remuneration successfully incentivised providers, there was an example in Cornwall where a cap on the maximum number of checks to be completed was placed upon practices to limit activity. This was following feedback how enthusiastic practices with a high propensity to benefit from the remuneration structure were completing large numbers of checks. In order to maintain public health budget expenditure a cap was used to set an upper limit of payment to be made per practice, after which no payment would be awarded for completed checks.

4.0 Key Findings

a. Does weighting financial remuneration to NHS Health Check providers affect the number and demographic of people having an NHS Health Check?

Review of the literature found a small number of papers describing case studies where weighting remuneration to providers has shown improvements in overall uptake of NHS Health Checks,[23,24] however these of low methodological rigour. Very little research was identified relating to the use of weighted remuneration to increase uptake in priority groups of NHS Health Checks.

Through interviews with local authorities, commissioners reported that while universal uptake figures may have remained stable since introducing weighted remuneration, data showed that more checks were being delivered to people in priority groups.

b. Can weighting financial remuneration to NHS Health Check providers increase take-up among the poorest and highest risk communities?

The literature review found that it was recognised that certain patients require extra effort on the part of the practice, (additional staff time) and that enhanced payments may be an appropriate way to account for this, as well as an example of how cardio vascular disease (CVD) risk (using QRisk score identified during a check) can be used to based payment tiers on[9].

Due to the small number of areas using weighted remuneration it is not possible to assess its impact on universal and targeted uptake compared to other methods. However, through the interviews, examples of practice where the use of weighted payments had successfully lead to greater uptake in priority groups following introduction of weighted remuneration were identified.

c. What financial remuneration weightings are currently used by local authorities with providers?

Few local authorities are currently using weighted remuneration for NHS Health Checks, with the most common remuneration being based on payment per activity. Of the areas using weighted payments there are a range of patient characteristics used to define ‘priority patients’ which attract greater payment, with patient deprivation (through postcode) being the most common characteristic used. Table 8 describes examples of remuneration structures currently used by a sample of local authorities.

d. Is there a threshold at which financial weighting affects take-up?

A threshold effect was not reported through the survey or interviews. A key element of the remuneration acting as a true incentive was reported to be the differential between the higher and lower payment, and making the higher payment more than what was offered previously per check (where a set amount was used per check previously). Lower tiers of payment were still

required to cover the resource costs of providing a check to ensure viability of checks. Lower tiers of payment were commonly £6-10, higher tiers £30-52.

e. Does any effect from weighting financial remuneration vary across different geographies or between different eligible population sizes?

Where it is used, commissioners reported that weighted remuneration is adaptable to different populations, using tools such as premature mortality audits and health equity audits to review which groups are under-represented in NHS Health Check uptake, and designing the remuneration to specifically address these inequalities.

f. What are the unintended consequences of weighting financial remuneration?

Implementation of weighted remuneration was reported to have led to three types of unintended consequences as recorded through interview;

- Risk of practice withdrawal from contract: Practices with few patients meeting the priority characteristics withdrawing from the NHS Health Check contract
- Risk of overspend: Practices being highly motivated to deliver checks attracting enhanced payments, leading to commissioners needing to put a cap on maximum payment per practice
- Risk of reduced uptake: Increased uptake in priority groups, but overall uptake of checks decreasing

4.1 Limitations

The use as a survey as a data collection tool is vulnerable to bias, which must be considered when interpreting results.

Response bias: the responses provided by commissioners are vulnerable to response bias where they do not truly represent the views or outcomes by being systematically incorrect. This may be due to social desirability bias (a tendency to agree with what the individual feels is expected of them) or acquiescence bias (a tendency to agree with statements). All statements had polarised opposites and were presented in a random order in effort to minimise these possible effects.

Example:

Positively framed	When used effectively, weighted financial remuneration criteria are able to be adapted to suit local populations
Negatively framed	Weighted financial remuneration is only applicable for certain types of population demographic

Non-response bias: commissioners who did not respond to the survey may be significantly different from those commissioners that did provide a response. This could positively skew the results making the intervention (in this case weighted remuneration) look more favourable than

it is in reality. All local authority commissioners were invited to participate in the survey, with multiple follow ups to encourage participation, in order to minimise this effect.

When running the analysis on the behavioural questions of the survey two outlier data points were identified. Although they are genuine data points they are considerably different to the majority of the group of participant's answers. If these values were removed, the opportunity component becomes statistically significant at p=.023. However the assumption in the model used was that all responses were genuine and therefore valid, so a conservative approach was taken and all data points included in the presented analysis.

5.0 Discussion and implications

Through the literature review, survey and interviews it was found that weighted remuneration is an under utilised and under evaluated tool used in commissioning of NHS Health Checks. Where used it can lead to targeted allocation of resources to prioritse checks on individuals with specific characteristics, but consideration of unintended consequences is required to ensure the method is used to best effect.

NHS Health Check commissioners demonstrated that the weighted remuneration is adaptable to different populations, using tools such as premature mortality audits and health equity audits to review which groups are under-represented in NHS Health Check uptake, and designing the remuneration to specifically address these inequalities. Rather than a threshold effect, the key element of the remuneration acting as a true incentive was reported to be differential between the higher and lower payment and making the higher payment more than what was offered previously per check (where a set amount was used per check previously). Lower tiers of payment were £6-10, higher tiers £30-52.

Learning collected through interviews reflected how commissioners had engaged with providers, identifying good practice in how to design and implement remuneration schemes to optimise impact. Regular, open and constructive discussion, training and support were all found to facilitate commissioner and provider relationships and enable successful introduction of new remuneration structures.

When analysing the behavioural drivers of commissioners comparing those who do and those who don't use weighted remuneration, capability and opportunity were not identified as key behavioural drivers. This suggests that commissioner's capability and opportunity to use weighted remuneration are not key behavioural drivers in determining whether the method is used or not. When analysing motivation to use weighted remuneration, there was a statistically significant difference between commissioners who do or do not use weighted remuneration, with those who do use it significantly more motivated to do so. Behavioural science has the potential to further explore these drivers of behaviour and use these findings to inform practice most effectively.

Implications

The Kinds Fund[26] explored GPs views of primary care commissioning, and noted that when considering enhanced services, which are up to the practice to sign up (such as NHS Health Checks) larger practices generally had greater capacity and desire to do so. The resource requirement in setting up such programmes can deter smaller practices; the risk of not recouping the funds making such services unappealing. When moving from an activity based payment to a weighted remuneration structure it is possible that providers are anchored to the previous payment amount, therefore any lower payment offered may be seen as potential loss, and loss aversion may lead to withdrawal from contract unless the enhanced payment amount adequately incentivises the provider.

Commissioners have the ability and experience of using financial incentives, or indeed disincentives, to influence the behaviour of providers and their delivery of services[26,27]. In turn, providers changing their behaviour can affect the costs they incur and the quality of care

delivered[28]. Payment systems are thus a process that can be designed to influence the achievement of objectives such as improved quality, efficiency and activity, specifically being useful at the margin to encourage good professional norms and practice[29].

Where health improvement programmes are commissioned simultaneously, e.g. as part of a lifestyle service, there is potential for weighted remuneration to be applied to all contracts, aligning approaches and working to reduce inequalities and improve population health.

6.0 Conclusion

Few local authorities use weighted financial remuneration for NHS Health Checks. Where it is used, the most common method applied is the identification of ‘priority’ patients being set based upon the population demographic/need, and for these patients to receive higher (enhanced) payment, with checks on all other patients receiving a lower (base) payment. Commissioner motivation appears to be the main behavioural driver associated with the use of weighted remuneration compared to other remuneration structures.

Weighted remuneration is adaptable to different populations, and local authorities can use tools such as health equity audits to review which groups are under-represented in NHS Health Check uptake; designing the remuneration to encourage specific allocation of resources to address these inequalities. Case study examples collected through interviews illustrated where the use of weighted payments has successful lead to greater uptake in priority groups.

Behavioural science has the potential to inform commissioning decisions to a greater extent than currently done so. Behavioural insights can be used to aid the design of incentives to minimise the potential for unintended consequences, maximise changes to behaviour and consequently the impact of the intervention.

The NHS Health Check programme aims to prevent heart disease, stroke, type 2 diabetes and kidney disease, and raise awareness of dementia both across the population and within high risk and vulnerable groups. Public Health England encourages the prioritisation of at risk sub-groups and this report helps to highlight where a prioritisation approach can be used to maximise equity while not compromising the reach of the programme to all eligible individuals.

6.1 Recommendations

- Consider using weighted remuneration to incentivise providers of NHS Health Checks to prioritise individuals who are more likely to be at risk of CVD
    - Financial incentives can be effective means to motivate general practices to target priority groups for NHS Health Checks.
    - When used, ensure remuneration approaches are evaluated for effectiveness.

- Use local population data and evidence to inform design of any weighted remuneration structure
    - Public health audits (e.g. health equity audits, premature mortality audit or equality audit), can be used to model the demographics and numbers that services would expect to attend NHS Health Checks, comparing these with reported performance can identify under-represented groups which may be suitable for prioritising.
    - Utilise emerging evidence to ensure approaches to remuneration remain evidence based

- Use procurement tools to facilitate changes to contracts
    - Contract variations can be used to introduce new remuneration structures; however the most common time to introduce changes is a routine contract review point.
    - Maximum remuneration can be specified in the contract to inform planning and mitigate against potential overspend.

- Work collaboratively with interested stakeholders
    - Commissioner engagement with practice managers, primary care, Clinical Commissioning Groups and Local Medical Councils in the development of the remuneration structures can facilitate successful implementation.
    - Utilise behavioural science and health psychology expertise to maximise impact and reduce potential of unintended consequences

- Support and engage with providers
    - Information and resources that improve commissioner's motivation to use weighted remuneration may be effective in changing their commissioning behaviour.

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Appendix A: Project Steering Group Members

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Appendix B: Literature search strategy

The Health Management Information Consortium (HMIC)

1 HMIC ("Health check*").ti,ab	497
2 HMIC ("economic incentive*").ti,ab	92
5 HMIC (remuneration*).ti,ab	831
6 HMIC (incentive*).ti,ab	2670
7 HMIC (target).ti,ab	3779
8 HMIC (finance).ti,ab	2766
9 HMIC (contract).ti,ab	3529
10 HMIC (2 OR 5 OR 6 OR 7 OR 8 OR 9)	12972
11 HMIC (1 AND 10)	58

EMBASE

12 EMBASE ("Health check*").ti,ab	5637
13 EMBASE ("economic incentive*").ti,ab	1040
14 EMBASE (remuneration*).ti,ab	2432
15 EMBASE (incentive*).ti,ab	27250
16 EMBASE (target).ti,ab	819688
17 EMBASE (finance).ti,ab	5318
18 EMBASE (contract).ti,ab	19028
19 EMBASE (13 OR 14 OR 15 OR 16 OR 17 OR 18)	871208
20 EMBASE (12 AND 19)	187

MEDLINE

21 Medline ("Health check*").ti,ab	4149
22 Medline ("economic incentive*").ti,ab	807
23 Medline (remuneration*).ti,ab	1889
24 Medline (incentive*).ti,ab	22456
25 Medline (target).ti,ab	633873
26 Medline (finance).ti,ab	4212
27 Medline (contract).ti,ab	15016
28 Medline (22 OR 23 OR 24 OR 25 OR 26 OR 27)	675576
29 Medline (21 AND 28)	144

Cumulative Index to Nursing and Allied Health Literature (CINAHL)

30 CINAHL ("Health check*").ti,ab	874
31 CINAHL ("economic incentive*").ti,ab	141
32 CINAHL (remuneration*).ti,ab	414
33 CINAHL (incentive*).ti,ab	6078
34 CINAHL (target).ti,ab	39821
35 CINAHL (finance).ti,ab	2344
36 CINAHL (contract).ti,ab	4301
37 CINAHL (31 OR 32 OR 33 OR 34 OR 35 OR 36)	52322
38 CINAHL (30 AND 37)	36

Health Business Elite (HBE)

39 HBE ("Health check*").ti,ab	392
40 HBE ("economic incentive*").ti,ab	366
41 HBE (remuneration*).ti,ab	1044
42 HBE (incentive*).ti,ab	19654
43 HBE (target).ti,ab	34231
44 HBE (finance).ti,ab	50509
45 HBE (contract).ti,ab	48228
46 HBE (40 OR 41 OR 42 OR 43 OR 44 OR 45)	150069
47 HBE (39 AND 46)	38
Total results	463
Results after duplicate removal	261

Search completed 27th April 2017

Appendix C: Papers identified in literature review

Table 9. Papers identified through systematic review of the literature

Paper	Methodology	Summary
Artac M, Dalton ARH, Majeed A, *et al*. Uptake of the NHS health check programme in an urban setting. *Family Practice* 2013;30(4):426-435.	Cross sectional	Study reported how uptake of the NHS Health Check programme was low in first year in patients with estimated high risk despite financial incentives to general practices. Recommends that further evaluations for cost and clinical effectiveness of the programme are needed to clarify whether this spending is appropriate, and to assess the impact of financial incentives on programme performance.
Krska J, du Plessis R, Chellaswamy H. (2016) Views of practice managers and general practitioners on implementing NHS Health Checks. *Primary Health Care Research and Development* 2016;17(2):198–205	Qualitative	Quotes from the report include how the views of GPs and Practice Managers was that "payments were insufficient to cover costs". Two specific responses stating that that some patients need more work/input and differential payments based on patient factors may be a way to address this.
Lee K, Rutledge M, Rouse A, Burden ACF. What methods did we use to achieve high take-up of the NHS health checks programme (NHSHCP)? *Diabetic Medicine 2013;* 30:138	Case study	Report describing the use of a tiered financial incentive. A maximum reward was given if more than 75% of suitable patients were screened, with quarterly internal activity targets, and if the target was not met after two quarters then the LES was withdrawn. Concludes that "high rates of NHS Health Checks can be achieved by a targeted and robust recruitment of GPs employing contract management geared to achieve high rates".
McDermott L, Wright A, Cornelius V. Enhanced invitation methods and uptake of health checks	RCT and cohort	Study exploring different invitation methods to increase uptake. Describes the use of a patient focussed financial incentive of £5 voucher for patients

in primary care. Rapid randomised controlled trial using electronic health records. *Health Technology Assessment* 2017;20(84):385		taking up the offer of a check.
Research Works Limited. *Understanding the implementation of NHS Health Checks research report.* 2013. London: Public Health England	Qualitative	Description of how some NHS Health Check commissioners have used financial incentives to increase appeal. Reports that commissioners have offered payment on a sliding scale, or in staged payments… [no further detail or references]
Robinson S. LES boosts uptake of enhanced health check. *GP: General Practitioner* 2012:12-12	Case study	News article reporting how GPs in NHS Heart of Birmingham were invited to sign up to the LES when the NHS Health Checks scheme began in April 2009. They earned maximum payment by screening 15% of eligible patients in 2009/10, rising to reach 50% in 2010/11 and 75% by this 2012. Whereas many other trusts pay a fixed amount for each patient screened, the Birmingham LES linked payment to coverage of the eligible population. GPs were also asked to target harder-to-reach patients without a recorded ethnicity. The trust screened 20,632 of 57,000 eligible patients in 2010/11, placing it third in the country, despite having one of the most deprived populations.
Robson J, Dostal I, Madurasinghe V, *et al*. The NHS Health Check programme: implementation in east London 2009–2011*. BMJ Open* 2015;**5(4):**e007578.	Evaluation	Evaluation of the implementation of the NHS Health Check programme in three Inner East London Boroughs, exploring the differing incentive structures for delivery of Health Checks. City and Hackney paid £12, £27 or £44 depending on whether they identified 10 year CVD risk was 0-9%, 10-19% or 20% or more, and achieved uptake of 59.4%.

Appendix D: Previous work on financial incentives and targeting of NHS Health Checks

In 2014 the PHE Behavioural Insights Team conducted a survey to gather information on the approach used in 2013/14 in the local commissioning and delivery of the NHS Health Check programme. It was found that areas of high deprivation, high representation of BME groups and workplaces with high CVD risk were the most targeted areas, although information of targeted payments was not collected.

Table 10. Q If NHS Health Checks were delivered opportunistically, was the service targeted in any of the following ways? (2014 survey)

	Response (Total)	Response (%)
Locations with high deprivation	34	57%
Locations with high CVD mortality	18	30%
Locations with high representation of black and asian ethnic groups	23	38%
Locations visited by men e.g. football stadium	12	20%
Workplaces where employees may be more likely to be at CVD risk	24	40%
Places of worship	19	32%
None	6	10%
Other, please specify	14	23%
Total Respondents (For this Question) (47 skipped question)		60

Appendix E: Examples of costs associated with health improvement programmes

General practices deliver a range of public health programmes, such as contraception (sexual health) and smoking cessation. Pricing for such services provides a context against which the NHS Health Check is offered. As detailed in Table 10, the amounts paid for such activities are often higher than the average payment for a NHS Health Check of £23.50, which may impact general practices motivation to provide NHS Health Checks over other, more lucrative public health services.

Table 11. Examples of costs associated with public health services in primary care

Activity.	**Cost**
Sexual health	
Insertion of contraceptive implant	£43-45
Removal of implant	£33-60
Insertion of IUCD	£81-82
Review of IUCD	£21-22
Removal of IUCD	£33-£38
Smoking cessation	
New client plus 4 week follow up	£30.50 - £40.60
4 week quit bonus	£30-40
12 week quit bonus	£50

Source: East Sussex County Council, Dorset County Council, NHS Camden CCG

There is limited reporting of weighted payment for similar public health programmes, however some examples were anecdotally picked up during this research. Camden and Islington's service specification for smoking cessation details additional payments for £15 for target communities e.g. BME, routine and manual workers, and £25 for disease groups e.g. respiratory disease, diabetes, mental health diagnosis. Smoking cessation in Berkshire adopted a similar approach, setting an enhanced payment for target groups and a base rate for the general population.