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INTRODUCTION

NHS Health Checks is a PHE-funded national 5-year (2011-2016) public health intervention program with a £200m annual budget. NHS Health Checks (HC) are routinely offered to eligible patients aged 40-74 years in participating general practices across England. The programme is designed to identify patients with undiagnosed conditions or who are at high risk of developing chronic illness such as CVD, diabetes, hypertension, and dementia; and addresses lifestyle issues such as overweight/obesity, smoking, improving activity levels etc. However, in many cases, the results of the Health Check Health CVD Risk Score are not available to the patient until some days after their initial Health Check visit which then require interpretation by a health care professional as per the Health Check protocol.

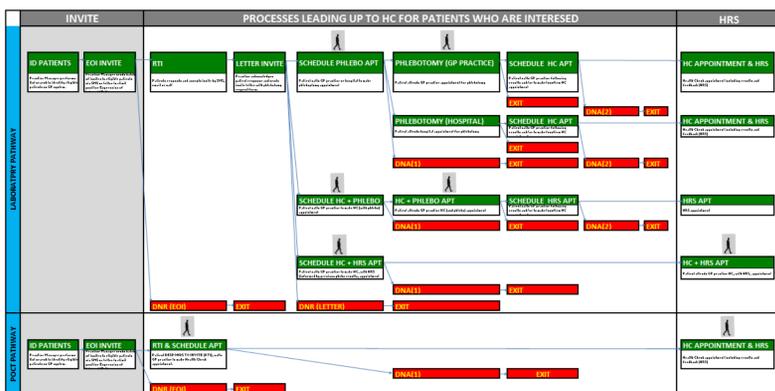
Accurate CVD Risk Score is often not communicated to patients undertaking a routine NHS Health Check on the same day due to the lag between the time of sample collection (i.e. blood test) and feedback of results from the laboratory undertaking the analysis. Furthermore, some people do not attend (DNA) their follow-up appointment; this further reduces what is an already low coverage of NHS Health Checks. Point of care testing (POCT) during a routine NHS Health Check in the primary care setting would allow for immediate feedback of results from 'pin prick' test samples taken from a patient, with the result leading to possible changes in the care provided to that individual.

AIMS

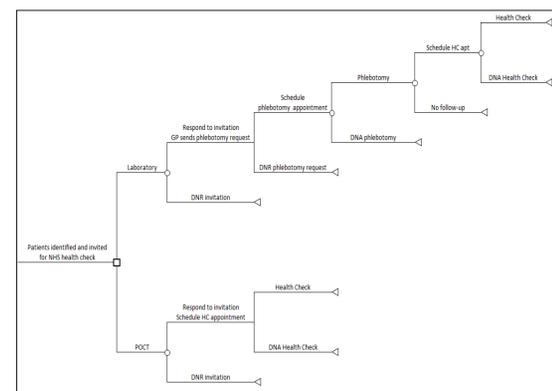
To investigate a range of screening scenarios and to determine if use of Point of Care Testing (POCT) is less costly than laboratory tests to inform results of an NHS Health Check in the primary care setting up to the point of CVD risk score presentation.

METHODS

Quantitative, qualitative and contextual data pertaining to NHS Health Checks up to the point of CVD risk score presentation were collected from 16 GP practices (n=14 using Alere Cholestech LDX[®] Analyser POCT device; n= 2 not using POCT device). Data on the number of patients who responded to initial NHS Health Check invitation letter, and whether or not patients attended the appointment, or did not attend (DNA), was also collected. Further data was collected from a pathology services laboratory serving the same cohort of practices in the same Clinical Commissioning Group (CCG). A cost-based health economic model (using a micro-costing analysis with 1 base case and 5 alternative scenarios) was used to determine if POCT screening pathways were less costly than laboratory pathway.



Scheme showing the patient journey when engaging with practice that offer health check in traditional (i.e. laboratory) or POCT pathways. This process map was used to create the decision tree used to drive the health economic model.



Decision tree showing laboratory (model 1- above) & POCT (model 2- below) NHS Health Checks driven pathway

RESULTS

Using POCT (Alere Cholestech LDX[®]) to inform results of NHS Health Check is less costly than traditional laboratory-led pathway from GP and NHS perspectives up to the point of CVD risk score presentation (range of saving in total expected cost = £8-£45 per 100 invited patients). Use of POCT can deliver CVD risk score in one sitting, whereas laboratory pathway offers patients several opportunities to DNA an appointment.

Permutations/ Model	Base case Scenario	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
	HCA led HC, DNR 90.2%, DNA 10.7% and 5%, lab fasting glucose	Nurse led HC, DNR 90.2%, DNA 10.7% and 5%, lab fasting glucose	Lab HbA1c, DNR 90.2%, DNA 10.7% and 5%	Including POCT training & device	HCA led HC, DNR 93.7%, DNA 16% and 5%, lab fasting glucose	HCA led HC, DNR 86.7%, DNA 5.3% and 5%, lab fasting glucose
Laboratory-led	£188.00	£286.00	£193.00	£188.00	£115.00	£267.00
POCT-led	£160.00	£278.00	£160.00	£165.00	£102.00	£222.00
Difference	-£27	-£8	-£32	-£22	-£13	-£45

Table showing results of 'base case' & alternative scenarios (Total expected cost per 100 patients).

The results of this micro costing analysis show that in all scenarios, delivering an NHS Health Check using POCT was less costly than in traditional laboratory led pathway

	Total costs	No. HCs completed	Costs/Completed HC
Model 1 - Laboratory	£1,917	76.62	£25
Model 2 - POCT	£1,640	89.37	£18
Difference	-£277	12.75	-£7

Table showing total expected cost, number of completed Health Checks and cost per completed Health Check per 100 invites

	Laboratory 1	Laboratory 2	POCT
GP hands out a phlebotomy request	£2.63	-	-
Schedule phlebotomy appointment	£1.02	-	-
Phlebotomy	£10.33	-	-
Schedule Health Check	£1.02	£1.02	£1.02
Health Check	£6.67	£6.67	£16.02
Total	£21.67	£7.69	£17.04

Table showing total expected costs for one patient completing an opportunistic Health Check at GP practice in either pathway.

SUMMARY & CONCLUSION

- Laboratory-led pathway offers several opportunities for patients to DNA appointment.
- Using POCT (Alere Cholestech LDX[®]) in the primary care setting to deliver an NHS Health Check up to the point of CVD risk score presentation is less costly than laboratory-led pathway.
- Use of POCT in this context could offer primary care organisations the ability to act as a 'one stop shop' to patients by delivering the NHS Health Checks in a single sitting, thus reducing the need for patients to be recalled some days later to learn about their health score. This arrangement could result in reducing the cost to the NHS by minimizing additional practice visits and the costs of contacting the patient.
- Use of POCT may also increase uptake rates in patients who are averse to blood extraction with a syringe.
- POCT testing would also be more convenient for patients as they could complete their health check during one visit.
- Use of POCT may also increase uptake rates in patients that are needle-phobic and averse to conventional methods of blood extraction with a cannulated syringe.

Acknowledgement

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