NHS Health Checks

An Update on the Debate and Program Implementation in England

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Abstract: Cardiovascular disease is the leading cause of mortality and morbidity worldwide. In England, the government has adopted a population-wide prevention program for cardiovascular disease, the NHS Health Check program. The program has sparked controversies over the evidence base and feasibility of implementation. We aim to provide an update on the debate and program implementation. In conclusion, the evidence base for the NHS Health Check program has a number of uncertainties and program delivery has been suboptimal. It is important to continue monitoring and evaluating the program to provide the evidence base for future policy direction. **Key words:** *cardiovascular disease, health check, public health, primary prevention*

CARDIOVASCULAR DISEASE (CVD) is the main cause of death and disability in many developed and developing countries (Krishnamurthi et al., 2013; Moran et al., 2014). Over recent years, the focus of health care systems has shifted from treatment of established disease to a primary prevention approach (Department of Health, 2008a, 2010). In the United States, the Million Hearts

Initiative aims to prevent 1 million heart attacks and strokes over the next 5 years (Frieden & Berwick, 2011). In 2008, the English Government announced a population-wide program, the National Health Service (NHS) Health Check program, to reduce the burden of CVD and associated health inequalities (Department of Health, 2008b). The program is based on prevention and early detection of individuals at high risk of developing CVD. The NHS Health Check program covers both CVD risk assessment and risk management in a primary care-led setting. The elements of the program are based on best available evidence from the World Health Organization (2007, 2008), the National Institute for Health and Care Excellence (2010), and the National Screening Committee (UK National Screening Committee and University of Leicester, 2012).

The details of the establishment of the program are described elsewhere (Dalton & Soljak, 2012; Department of Health, 2008a). This article aims to provide an update on the implementation of the NHS Health Check program in England and the often vigorous debate about the program.

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THE EVIDENCE CONTROVERSY

There is growing debate about both the clinical effectiveness and cost-effectiveness of systematic health checks. Critics of the program cite a meta-analysis by Krogsbøll et al. (2012), who conducted a Cochrane systematic review and meta-analysis of the effects of randomized controlled trials. They compared health checks with no health checks in adult populations unselected for disease or risk factors and focused on the effects on mortality. The authors defined health checks as screening general populations for more than one disease or risk factor in more than one organ system. Krogsbøll et al. found that nine trials recorded the total mortality outcome and the risk ratio for death was 0.99 (95% confidence interval, 0.95-1.03). Eight trials provided data on CVD-associated mortality, with the estimated risk ratio of 1.03 (95% confidence interval, 0.91-1.17). The authors concluded that general health checks did not reduce total mortality or cause-specific mortality from CVD and cancer. Krogsbøll et al. (2013) followed their review with a call to abandon the NHS Health Check program in England).

In England, this sparked a number of different responses from Public Health England (PHE) (2013b), researchers, and health care professionals. The President of the Faculty of Public Health stated that the NHS Health Check program can be beneficial, particularly for people in deprived areas (Faculty of Public Health, 2013). Some researchers argued that the conclusion of Krogsbøll et al. had limited relevance to the NHS Health Check program, because the most recent study included started in 1999, and so preceded the statin era, and called for a robust evaluation of the program based on patient-level primary care data in terms of CVD outcome (Majeed & Banarsee, 2013; Soljak, 2013; Soljak et al., 2013). On the contrary, the chair of the Royal College of General Practitioners backed the Nordic researchers' views to scrap the NHS Health Check program (Price, 2013).

The evidence debate rumbles on. Si et al (2014) published a systematic review focusing specifically on general practice-based

health checks, which showed that they are associated with statistically significant, albeit clinically small, improvements in surrogate outcome control, especially among high-risk patients. Most of the included studies were not designed to assess mortality. Most recently, a Danish controlled trial of counseling interventions found no effect on CVD incidence or mortality after 10 years, but it did not include any data on primary care management or prescribed drugs over the study period.

IMPLEMENTATION ISSUES

Most Health Checks are conducted by general practices, usually by practice nurses and health care assistants, although alternative service providers and pharmacists are delivering them in some areas. In 2013-2014, 18.5% of the 5-year (2013-2018) eligible population was offered an Health Check intervention compared with 16.5% in 2012-2013, but of the 15 million target population, 12 million of the population are still outstanding (PHE, 2014). Meanwhile, general practices are struggling with higher patient demand in the face of stagnant NHS funding because of the parlous state of UK public finances. However, the equivalent New Zealand program shows that 75% coverage can be achieved (New Zealand Ministry of Health, 2013).

There are also concerns over the 49% invitation uptake rate, which could widen health inequalities (House of Commons, 2014). As part of NHS reforms, responsibility for delivering Health Checks was transferred in 2013 from the NHS to local government, which slowed progress, but PHE is supporting local authorities to promote uptake (PHE, 2013b).

On the contrary, a local UK study showed that program uptake is high in a deprived and culturally diverse area, with 44.8% of high-risk patients attending a Health Check program (Dalton et al., 2011). Furthermore, Artac et al. (2013a) conducted a cross-sectional study of Health Check coverage in England and found that the uptake is significantly higher in deprived communities.

COST-EFFECTIVENESS

The economic costs and benefits of the program are based on modeling work by PHE. The model estimated that the savings to the NHS budget nationally are around £57 million over 4 years, rising to £176 million over a 15-year period. It is estimated that the program will pay for itself after 20 years as well as having delivered substantial health benefits (PHE, 2013a). The PHE Health Check action plan stated that Health Checks could annually prevent 1600 heart attacks and save 650 lives; prevent 4000 people from developing diabetes; and detect at least 20 000 cases of diabetes or kidney disease earlier. The estimated cost per quality-adjusted life year was approximately £3000 (Department of Health, 2008a).

Researchers using the Archimedes simulation model published a mathematical modeling study that estimated the cost-effectiveness of several health check strategies compared with a control scenario in six European countries: France, United Kingdom, Poland, Germany, Denmark, and Italy (Schuetz et al., 2013). The model showed that in the United Kingdom, for every 1000 individuals who undertake the base-case health check, 13.2 major CVD events and 9.6 microvascular complications (blindness, chronic kidney disease, end-stage renal disease, renal death, foot ulcer, or amputation) could be averted. In the United Kingdom, the analysis at 30 years' follow-up showed the cost per quality-adjusted life year to be €2426, and it is cost saving if the program targeted the top quartile of risk or those with obesity. The researchers concluded that the Health Check program would be cost-effective in all 6 countries. This analysis echoes the original PHE modeling work and provides further support to the program.

The case for primary prevention of CVD with statins was made by a recent Cochrane review (Taylor et al., 2013). The authors assessed the effects, both harms and benefits, of statins in people with no history of CVD. It concluded that all-cause mortality, major

vascular events, and revascularizations were reduced and there was no excess of adverse events among people without evidence of CVD treated with statins. Furthermore, in their new, equally controversial guidelines, the American College of Cardiology and the American Heart Association Task Force has lowered the threshold of statin treatment for patients aged 40 to 75 years from 20% or higher 10-year CVD risk to 7.5% or higher (Stone et al., 2013). In the United Kingdom, there has been a similar proposal by NICE to reduce the 10-year CVD risk threshold for statin treatment to 10% or higher rather than 20% (National Institute for Health and Care Excellence, 2014).

The systematic approach to prescribe statins through the NHS Health Check program is likely to contribute to a substantial fall in CVD events. A local evaluation of the English program showed large increases in appropriate statin prescribing after a Health Check (Artac et al., 2013b). However, a group of prominent academics has written to NICE expressing concern about medicalization of healthy individuals, true levels of adverse events, hidden data, industry bias, loss of professional confidence, and NICE experts' conflicts of interest (Wise, 2014). While the current government has continued the Health Check program, it has been slow to address the wider agenda, such as greater regulation of the food industry.

CONCLUSION

The need to prevent CVD through both broader public health interventions and primary care-based programs is pressing despite concerns about the evidence base. The controversies around the NHS Health Check program should not deter the United Kingdom from combating CVD through its highly organized primary care services. There is no doubt that more work is needed to monitor and evaluate the effectiveness of the program and to find effective approaches to present risk and support changes in health behaviors.

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