

NICE - Preventing cardiovascular disease (CVD) at population level

Expert testimony paper on the independent evaluation of Have a Heart Paisley Phase One (Scotland's National CHD Prevention Demonstration Project).

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This paper is based on the final and interim reports of the independent evaluation of Have a Heart Paisley and on the author's PhD Thesis on this topic. The author, therefore, acknowledges the contributions of the Principle Investigator Professor Ken Judge and all the members of the Have a Heart Paisley Independent Evaluation Team (and grant holders) based within the then Health Promotion Policy Unit, Public Health and Health Sciences Section of the University of Glasgow and other collaborating institutions listed. She also acknowledges those involved in the delivery of Have a Heart Paisley Phase One. The evaluation was funded by the Chief Scientists Office, The Scottish Government.

Background and description of Have a Heart Paisley

The Scottish Executive (SE), the administrative body for Scotland's devolved parliament, commissioned the first phase of a National Coronary Heart Disease (CHD) Demonstration Project, entitled Have a Heart Paisley (HaHP), in 2000.

HaHP received £6 million to fund a three-year programme. HaHP was a complex community-based, and area-based, initiative that aimed to reduce and prevent coronary heart disease (CHD) within the town of Paisley. The detailed aims and objectives and prioritised cross cutting outcomes are shown in Appendix 1.

HaHP was a strategic partnership between the various entities that made up NHS Argyll and Clyde (the Primary Care Trust, the Local Health Care Cooperative, and the Acute Trust), Renfrewshire Council and local community and voluntary organisations. HaHP consisted of seventeen separate but linked strands of activity (each containing multiple large and small scale projects) addressing both primary and secondary prevention of CHD. The high level logic model depicting HaHPs theory of change is shown in Appendix 2.

HaHP was influenced by, and hoped to emulate, the North Karelia Project¹.

HaHP is no longer in existence although it did continue in a more focused way developing and evaluating the role of health counselling for CVD prevention for 45-65 year olds at high-risk of CHD during a second phase from 2005 –2008².

Paisley is Scotland's largest town situated south west of Glasgow. It suffers from high unemployment and socio-economic deprivation. In 2001 it had a population of 76,355, however this was declining and there was a substantial amount of outward migration. The deprivation levels in Paisley were much higher than the average figures for Scotland³. Although CHD trends in the area were improving, the CHD mortality and morbidity figures were similarly elevated³. Paisley had experienced many previous government interventions aimed at reducing poverty and regenerating the area. At the time of the HaHP intervention there was a substantial housing regeneration project underway and a school rationalisation programme. There were also numerous government and non-government funded, time-limited, health related programmes ongoing in Paisley. A major financial deficit existed within the local

NHS board that hosted HaHP. These contextual issues were important in relation to supporting or detracting from the impact of HaHP.

The independent evaluation of Have a Heart Paisley

The HaHP independent evaluation contract was won by grantholders from the University of Glasgow, NHS Greater Glasgow and the University of Paisley. The funding for this was received in January 2001. The evaluation was led by the Health Promotion Policy Unit (HPPU) within the Public Health and Health Sciences Section of the University of Glasgow. The overall grant awarded was £400,000. In order to address the challenges set out in the invitation to tender (to evaluate impact, outcomes and processes, to address issues of external validity and provide policy lessons) the independent evaluation design consisted of four separate but linked approaches⁴. The four approaches were:

- a theory-based approach (the Aspen Institute's 'Theories of Change')⁵;
- the mapping of the social context within which HaHP took place;
- a quasi-experimental pre and post survey; and,
- a range of integrated case studies.

These approaches were used to gather data from a range of stakeholders and activities targeted at different groups (agencies, professionals, patients and the general public) and levels (strategic, operational and participant) across the HaHP intervention. The methods were also applied across different timescales. A fuller explanation of the methodologies can be found in the interim and final evaluation reports^{4, 6-10}. In addition a number of internal evaluations were conducted on specific programme areas not covered by the independent evaluation.

Limitations in the design and implementation of the evaluation

There were several limitations in the design and implementation of the evaluation¹¹ the most obvious of which related to the quasi experimental survey.

The independent evaluation of HaHP conducted a quasi-experimental survey of a randomly selected stratified sample within specific age, gender and deprivation categories from the Paisley and Inverclyde (the comparator site) populations. Questionnaires were used to gather self-report information on risk behaviours and related knowledge and attitudes. This was combined with objective health measures of key risk factors gathered via health examinations at baseline.

The survey was initially designed to provide samples of specific age, sex and deprivation categories that were representative of the Paisley population. It was intended that both cross sectional and cohort samples could be drawn at baseline and would be followed-up at the end of HaHP. Early response rates were lower than expected and, as a result, the cohort group for follow up were drawn from within the cross sectional sample rather than selected independently of them.

Various attempts were made to ensure the recruitment of the intended sample size. Despite these efforts the baseline questionnaire survey only achieved a response rate of 28% and 27% respectively for the intervention and control sites. Even with a good response rate, the evaluation team were aware that small changes could be missed in many of the wide range of CHD related behaviours and risk factors that might result from the HaHP interventions. The low response rate, however, reduced the power further. The survey had not been set up to measure change at multiple (more than two) time points and so this also limited its power and the possibility of assessing individual participants' trajectories of change.

The evaluation team were reluctant to repeat the planned follow-up survey in the initially agreed timescales (two and a half years). However, despite concerns raised by evaluators (over low response rates, slow programme implementation and limited time within which change could have occurred) the SE requested that the original timetable and plans be adhered to. It was agreed, however, that follow-up would use all of the limited number of respondents as a cohort and that the health examinations would not be repeated at the follow-up. The follow-up questionnaire was a shortened version of the baseline questionnaire. The indicators selected focused on areas where change was most likely to occur based on the formative evaluation findings. The follow-up survey was sent to all previous responders to the baseline survey and a 78% response rate was achieved. For details of the analysis see Appendix 3 or for further detail see the final report⁴.

The findings from the quasi experimental survey

The analysis of paired data for those individuals who had responded to both surveys, illustrating the extent and direction of changes in all of the key variables (n=36) between the Paisley and Inverclyde samples, uncovered only one variable that showed a significant association. This showed a significant change in knowledge of the number of portions of fruit and vegetables that should be eaten each day to stay healthy. Although knowledge increased in both areas, a greater positive change in knowledge was found in the Inverclyde sample compared to the Paisley sample. No other significant associations were found.

The comparison of the direction and magnitude of changes found between those in the Paisley sample who had engaged with HaHP, compared to those who had not, found only one significant association. This indicated that those who had engaged with HaHP reported a greater improvement in the numbers of portions of vegetables eaten per day than those not engaged with HaHP. No other associations were found to be significant.

It should be noted that the evaluators could not say with confidence that there were only the two above associations. Other changes may have occurred that were not measurable due to the limitations in survey design, the limited time between follow-up and baseline, the low response rates and problems in the representativeness of the samples.

The wider evaluation findings

Despite the limitations in the survey described above the findings from the triangulation of the multiple other sources of primary data from the theory of change and case study aspects of the evaluation^a also suggested that HaHP (phase one) did not achieve significant changes in population level CHD risk factors, behaviours, morbidity or mortality.

^a The theory of change aspects of the evaluation entailed upwards of 30 stakeholder interviews repeated at three time points and the construction of detailed logic models for each strand. The case study areas were of the key settings of community, primary care and the local authority and involved in total 72 in depth interviews, 11 focus groups and two smaller scale surveys (see references 4, 6-10 and 11).

These findings showed that HaHP had repeated many of the mistakes of previous community-based CHD prevention interventions (CBCIs)^{11,12,13} by failing to fully implement their intended theories of change, and as a result of the unrealistic ambitions that such theories contained. Whilst there is limited good practice evidence available for many of the areas that HaHP attempted to address, like previous CBCIs, HaHP failed to ensure that its interventions were consistently based on evidence of good practice where such evidence was available. Similarly, whilst there is still substantial debate about how best to address inequalities, HaHP did not have clear strategies for this area of their work nor did it sufficiently target or tailor interventions to those most likely to be suffering from multiple discrimination or exclusion in relation to CHD services or health enhancing opportunities.

As has happened in most CBCIs^{11,12,13,14}, HaHP delivered predominantly individually focused interventions rather than programmes that addressed more upstream policy, agenda, service or environmental change that would encourage and sustain greater behaviour change. The limited efficacy (and in some cases quality) and the individual focus of interventions restricted their coverage of, and impact on, the Paisley population. As well as having limited reach, many of the projects were not intensive or delivered frequently enough to provide a large enough dose or great enough exposure to the interventions to overcome competing influences on health related behaviour or entrenched habits.

HaHP did make good progress with regard to engaging the community, however, the community were not engaged sufficiently at a strategic level and so the intervention remained a ‘top down’ intervention rather than becoming a community movement. Similarly, although partnership working improved, this did not occur quickly enough or to such an extent that key partner agencies radically improved their services and policies. Whilst many of these factors occurred due to problems with project planning and implementation, they also resulted from systemic failure in the way that HaHP (like many other similar pilot initiatives) was established and commissioned.

The implications for future similar interventions

The findings from HaHP add to existing evidence, that large-scale behaviour and cultural change will predominantly be achieved through national action and the

increasing use of ‘upstream’, legislative, or policy solutions, or changes in mainstream services and organisations^{12,13,14,15,16}. Activity in localised demonstration projects is likely to add to such change rather than create it.

Any future similar interventions should make better use of planning tools such as Logic Models^{17,18} and the RE-AIM framework¹⁹ that fully consider issues such as the reach, efficacy, adoption, implementation fidelity and maintenance of interventions. The evidence-base for key areas of activity such as community-building and addressing inequalities needs to be further developed and the duration and intensity of the interventions need to be relative to the programme’s aspirations.

References

Reports 6-11 can be accessed from NHS Health Scotland Research Support Team [research.officer@health.scot.nhs.uk] or the author of this report [avril.blamey@ntlworld.com] as the phase one interim reports are not all contained on current websites.

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- 18 The following link hosts the CDC logic model bibliography <http://www.cdc.gov/eval/resources.htm#logic%20modelcdc> (Accessed March 24th 2009)
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Appendix 1: Have a Heart Paisley's aims, objectives and prioritised cross cutting outcomes

HaHP Aims:

- To change lives and perceptions of every citizen of Paisley by impacting on life circumstances, lifestyles and specific cardiovascular issues
- To prevent heart disease from developing
- To delay the progression of existing heart disease
- To ensure access to appropriate care once the symptoms of heart disease are present and to prevent them from getting worse

HaHP Objectives:

- To reduce inequalities in health by weighing resources to more socially excluded communities
- To demonstrate environmental change through the implementation of appropriate policies by a range of agencies
- To increase awareness, knowledge and skills in relation to heart disease risk factors in the Paisley population
- To increase the number of people adopting healthy lifestyles
- To increase the number of people (professionals, volunteers and the community) accessing appropriate training
- To establish a risk factor database and disease register for CHD
- To establish risk factor profiles for people at risk from CHD
- To improve the delivery of CHD prevention by effective implementation of national clinical guidelines
- To ensure effective evaluation of programme components through defining intermediate indicators as well as appropriate outcome measures

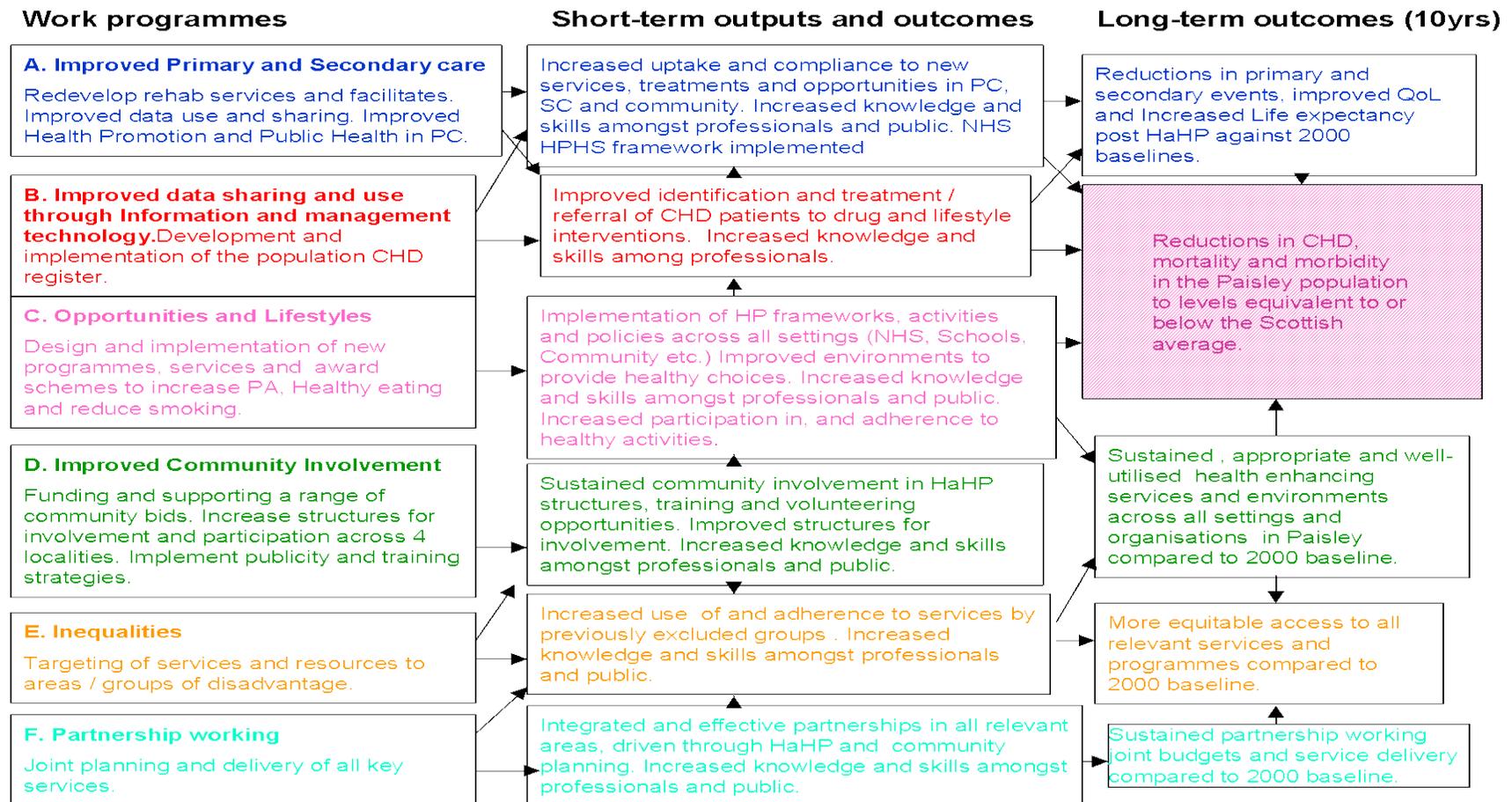
Taken from HaHP's submitted (and accepted) proposal for funding for the Scottish National CHD Demonstration Project

Have a Heart Paisley's cross-cutting outcomes vital to success

In order to succeed HaHP will require to

- apply evidence-based practice;
- address health inequalities in relation to CHD;
- improve partnership working to jointly deliver synergistic programmes;
- fully engage the community at all levels of the programme
- achieve agenda and policy change in the key agencies responsible for service delivery;
and,
- ensure that services and activities reach and are adopted by sufficient number of the Paisley population to achieve cultural change/changes in social norms

Appendix 2 : Strategic Logic Model for Have a Heart Paisley



Appendix 3: Further information on the survey analysis

Responders and non-responders, and their individual and group characteristics, were compared using independent t-tests and chi square tests. An analysis of paired data was conducted for individuals who responded to both surveys (n=556) illustrating the magnitude and direction of changes in all recorded key variables (n=36) between the Paisley and Inverclyde (comparison area) samples. Chi square tests were used to identify and test the significance of resulting associations. A further comparison was conducted of those within the Paisley sample who had engaged with HaHP (n=54) compared to those who had not (n=220). A process (similar to that described above) investigating the existence, magnitude and direction of any changes in key variables (n=36) within and between the two groups was repeated.