Community Engagement – approaches to improve health and reduce health inequalities

Précis of the Economic Chapter of the EPPI Review (Component 1, Stream 3)

Health Economics 1

National Institute for Health and Care Excellence

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Glossary

Cost-benefit analysis (CBA). In a cost-benefit analysis (CBA), the costs and benefits are measured using the same monetary units (for example, pounds sterling) to see whether the benefits exceed the costs[1].

Cost-consequence analysis (CCA). Cost-consequence analysis (CCA) compares the costs (such as treatment and hospital care) and the consequences (such as health outcomes) of a test or treatment with a suitable alternative. Unlike cost-benefit analysis or cost-effectiveness analysis, it does not attempt to summarise outcomes in a single measure (such as the quality-adjusted life year) or in financial terms. Instead, outcomes are shown in their natural units (some of which may be monetary) and it is left to decision-makers to determine whether, overall, the treatment is worth carrying out[2].

Cost-effectiveness analysis (CEA). Cost-effectiveness analysis (CEA) assesses the cost of achieving a benefit by different means. The benefits are expressed in non-monetary terms related to health, such as symptom-free days, heart attacks avoided, deaths avoided or life years gained (that is, the number of years by which life is extended as a result of the intervention)[3].

Cost-utility analysis (CUA). In a cost-utility analysis (CUA), the benefits are assessed in terms of both quality and duration of life, and expressed as quality-adjusted life years (QALYs). Utility refers to the measure of the preference or value that an individual or society places upon a particular health state. It is generally a number between zero (representing death) and 1 (perfect health). The most widely used measure of benefit in cost-utility analysis is the quality-adjusted life year, but other measures include disability-adjusted life years (DALYs) and healthy year equivalents (HYEs)[4].

Disability Adjusted Life Year (DALY). A measure of the impact of a disease or injury in terms of healthy years lost[5].

Incremental cost-effectiveness ratio (ICER). The difference in the mean costs in the population of interest divided by the differences in the mean outcomes in the population of interest[6].

Neighbourhood Warden Scheme. Neighbourhood wardens are a neighbourhood level uniformed, semi-official patrolling presence. Schemes are located across England and Wales and predominantly in

[1] https://www.nice.org.uk/Glossary?letter=C
[2] https://www.nice.org.uk/Glossary?letter=C
[3] https://www.nice.org.uk/Glossary?letter=C
[4] https://www.nice.org.uk/Glossary?letter=C
[5] https://www.nice.org.uk/Glossary?letter=D
[6] https://www.nice.org.uk/Glossary?letter=I

deprived urban areas. There is no typical wardens scheme. Schemes vary in the problems they aim to tackle, their objectives and the way in which they are managed and operate[7].

Randomised controlled trial. A study in which a number of similar people are randomly assigned to 2 (or more) groups to test a specific drug or treatment. One group (the experimental group) receives the treatment being tested, the other (the comparison or control group) receives an alternative treatment, a dummy treatment (placebo) or no treatment at all. The groups are followed up to see how effective the experimental treatment was. Outcomes are measured at specific times and any difference in response between the groups is assessed statistically. This method is also used to reduce bias[8].

Sensitivity analysis. A form of modelling that evaluates the impact of alternative values for some of the model parameters. Often used when there is significant uncertainty about the value of the parameter[9].

Quality Adjusted Life Year (QALY). A measure of the state of health of a person or group in which the benefits, in terms of length of life, are adjusted to reflect the quality of life. One QALY is equal to 1 year of life in perfect health. QALYs are calculated by estimating the years of life remaining for a patient following a particular treatment or intervention and weighting each year with a quality of life score (on a zero to 1 scale). It is often measured in terms of the person's ability to perform the activities of daily life, freedom from pain and mental disturbance[10].

Willingness To Pay (WTP) The maximum amount an individual is willing to pay to acquire a good or a service, or the maximum amount an individual is willing to pay to avoid a prospective loss[11].

[7] Office of the Deputy Prime Minister 2004

[8] https://www.nice.org.uk/Glossary?letter=R

[9] https://www.nice.org.uk/Glossary?letter=S

[10] http://www.nice.org.uk/Glossary?letter=Q

[11] http://www.dictionarycentral.com/definition/willingness-to-pay.html

1. Introduction

The Centre for Public Health (CPH) at the National Institute for Health and Care Excellence (NICE) has commissioned an economic analysis to support the development of a NICE guideline on 'Community engagement - approaches to improve health and reduce health inequalities' in order to update Public Health Guideline 9. The final guideline scope is available at https://www.nice.org.uk/guidance/gid-phg79/documents/community-engagement-update-final-scope-2.

There are **three streams** of work associated with the guideline update:

1. Community engagement: a report on the current effectiveness and process evidence, including additional analysis.
2. Community engagement: UK qualitative evidence, including one mapping report and one review of barriers and facilitators.
3. An economic analysis (cost effectiveness review and economic model)

Stream 3 is further divided into **three components:**

- **Component 1:** A précis of the economic evidence reported in "Community engagement to reduce inequalities in health: a systematic review, meta-analysis and economic analysis"[12] available at: http://www.journalslibrary.nihr.ac.uk/__data/assets/pdf_file/0006/94281/FullReport-phr01040.pdf , the précis to include detailed evidence tables and NICE style evidence statements.
- **Component 2:** A rapid review of economic evidence on community engagement interventions from 2010 onwards. Cost data and outcomes to be included to inform any economic modelling (component 3 below).
- **Component 3:** An economic model (or models) exploring the cost effectiveness of different approaches to community engagement.

This reports relates solely to the first component – A précis of the economic evidence reported in "Community engagement to reduce inequalities in health: a systematic review, meta-analysis and economic analysis" (EPPI review) - of the third work stream.

Community engagement is defined as "an umbrella term encompassing a continuum of approaches to engaging communities of place and/or interest in activities aimed at improving population health and/or reducing health inequalities"[13]. For the purposes of this guideline, 'community engagement' covers community engagement and community development. The scope for the guideline associates the term

[12] O'Mara-Eves, A., Brunton, G., McDaid, D., Oliver, S., Kavanagh, J., Jamal, F., Matosevic, T., Harden, A., Thomas, J., 2013. Community engagement to reduce inequalities in health: a systematic review, meta-analysis and economic analysis. Public Health Res 1. doi:10.3310/phr01040

[13] Popay, J., 2006. Community engagement for health improvement: questions of definition, outcomes and evaluation. A background paper prepared for NICE. London: National Institute for Health and Care Excellence

‘community engagement’ with a number of activities by which people can improve their health and wellbeing by helping to develop, deliver and use local services and by being involved in the local political process. Community engagement can involve varying degrees of participation and control: for example, giving views on a local health issue, jointly delivering services with public service providers (co-production) and completely controlling services.

The purpose of this report is twofold. First, we present a brief summary of the analysis and findings reported in Chapter 7 “Synthesis IV: economic analysis of costs and resources” of the review of community engagement to reduce inequalities in health conducted by O’Mara-Eves et al. (2013) – the EPPI review. Second, we present our analysis and findings in terms of the economic data presented in the studies that O’Mara-Eves et al have included in Chapter 7. In our analysis, we present the studies in terms of the type of economic analysis performed by the authors of the studies: cost-consequence analysis (CCA), cost-effectiveness analysis (CEA), cost-benefit analysis (CBA), and cost-utility analysis (CUA). The definitions of these types of analysis are presented in the Glossary.

2. Overview of the EPPI review (O'Mara-Eves et al., 2013)

In the EPPI review, O'Mara–Eves et al. (2013) set out to identify community engagement approaches that improve the health of disadvantaged populations or reduce inequalities in health. From what emerged in the review, the authors have conceptualised three main theoretical approaches to community engagement. These are:

- Peer/lay delivered interventions;
- Collaboration between health and other statutory services and communities;
- Interventions centred on the concept of empowerment.

Peer/lay delivered interventions include services engaging the communities and individuals to deliver interventions within the community. The idea of peer-lay community engagement is based on the notion that the intervention delivered by a community member can be "…facilitated by the credibility, expertise or empathy that the community member can bring to the delivery of the intervention" (O'Mara-Eves et al. 2013, page xv).

Collaboration involves cooperation or consultation with the community about the planning of an intervention. The concept around this type of community engagement is based on the theory that the intervention is more applicable to participants' needs as a result of involving communities.

The concept of community empowerment is based on a model where the needs of communities are identified by the community itself and the communities mobilize themselves into activities to make changes within themselves.

In their review, O'Mara-Eves et al. also tried to assess the cost and relative cost-effectiveness of community engagement approaches. In Chapter 7 they tried to answer the following questions:

Question 1: What are the resource implications of effective approaches to community engagement?

Question 2: Are better outcomes simply the result of increased resources, or are some approaches to community engagement potentially more cost-effective than others?

To answer these questions and to analyse the economic data, O'Mara-Eves et al. developed two tools to capture data on economic issues (e.g. sufficiency of funds) and resource utilisation, cost and cost–consequences (e.g. staff costs). When looking for cost and resource use in all the included papers, the lack of disaggregation of costs was an issue that affected O'Mara-Eves et al.'s review as it was not possible clearly to distinguish between the costs of the intervention and the costs of the evaluation. In addition, the cost of the interventions usually did not distinguish between costs associated with community engagement and costs related to the delivery of the usual mode of care. Of the 210 papers

identified as having some discussion on economic issues, the authors report that only 12 papers provided information on the costs associated with volunteering –of these four studies are economic evaluations and included in this précis[14]- and only 18 studies separated out the costs associated with paid staff –of these seven studies are economic evaluations and included in this précis[15]. No clear conclusion is drawn by the authors on this issue.

O'Mara et al. also identified 22 economic studies[16] (of 519 papers screened) that satisfied their inclusion criteria, that is, all studies are primary research studies and included some form of economic analysis. Of these, 14 studies were conducted alongside randomized controlled trials (Andersen et al. 2002, Barnet et al. 2002, Borgia et al. 2005, Brown et al. 2002, Campbell et al. 2008, Ell et al. 2002, Frick et al. 2004, Fried et al. 2004, Krieger et al. 2005, McIntosh et al. 2009, Paskett et al. 2006, Pugh et al. 2002, Reijneveld et al. 2003, Richardson et al. 2008) and five studies are quasi experimental (Borgia et al. 2005, Kumpusalo et al. 1996; Lindqvist et al. 2001; Long et al. 1995; Secker-Walker et al. 2005). The study by Pinkerton et al (1998) is a mathematical model and the papers by the Office of the Deputy Prime Minister (2004) and Zhou et al. (2003) are designed as programme evaluations.

The 22 studies included in this précis are considered economic analysis studies by the EPPI review team, although they acknowledge that most of these studies are of limited quality and have not been undertaken intentionally as part of an economic evaluation. We agree with this assessment after reviewing the papers again, as it appeared that the aim of a number of studies, especially the cost-consequence analyses, was not necessarily to address questions of cost-effectiveness. Rather studies were designed primarily to assess the effectiveness of an intervention and costs appeared to be included as an afterthought.

Of the 22 studies, 11 studies fell into the category of peer or lay delivered interventions, eight[17] were categorised, to varying extents, as collaboration between health and statutory services and communities and three were concerned with models of engagement centred on empowerment.

Chapter 7 of the EPPI review also discusses the value of volunteering; the use of financial and other incentive mechanisms; gains and losses in human and social capital, and funding and sustainability. The value of volunteering, for example the time taken by volunteers to participate in community engagement activities has been evaluated in some papers but, in most studies, time that volunteers devote to the project are treated as a "free" good and no value has been assigned to this input. Benefit gains from volunteering for the volunteers themselves has been recognized as well but, again, not evaluated. In some cases volunteers have been encouraged to complete training by receiving payments, as well as receiving small gifts, tokens or refreshments. These also need to be incorporated into the

[14] Fried et al. 2004, Zhou et al. 2003, Pinkerton et al. 1998, Secker-Walker 1996

[15] Fried et al. 2004, Long et al. 1995, Pugh et al. 2001, Zhou et al. 2003,, McIntosh et al. 2009, Pinkerton et al. 1998,, Secker-Walker 1996

[16] O'Mara-Eves et al. (2013) report having included 21 studies, but they in fact make reference to 22 studies.

[17] The review states seven but actually references eight studies.

evaluation and a monetary value should be attributed. Payments to volunteers could encourage their participation in community engagement activities, especially persons with disadvantaged backgrounds who are on a low income or retired. A small stipend to cover travel and food costs could stimulate volunteer participation and could show appreciation of volunteers' input.

Financial and other incentives are important in evaluations. In-kind incentives to ensure a good level of participation can include various goods, such as free baby rattlers, food and drinks. O'Mara-Eves and colleagues conclude that financial incentives can be useful in promoting behaviour change especially in the short term although incentives in the form of free transport, childcare or supermarket vouchers were not found to show improvements in participation rates.

Gains and losses in human capital can be presented in terms of skills acquired, employment, increased employment opportunities, community cohesiveness and skills gained. Some studies have measured confidence gains due to programme implementation. Improvements in computing skills and confidence have been observed too. Increased breastfeeding, improved parenting skills and increased immunisation rates were also observed in the communities. The cost of negative consequences or unsustainable engagement (disengagement from the community, feeling distressed or becoming cynical) has also been identified in various studies summarized by O'Mara-Eves and colleagues (2013). However, O'Mara-Eves and colleagues argue that negative impacts are not often highlighted in the studies.

Funding and sustainability have been briefly discussed in process evaluation analysis. Issues with available project funding and time and effort needed to seek financial support can undermine the existence of community engagement programmes. Long-term sustainability of funding is difficult to secure. There have been cases when funding was withdrawn that meant that programme has ended abruptly.

3. Methodology

3.1. Review question

In addition to O'Mara-Eves et al. (2013) research questions stated above (Section 2.0), we have attempted to answer in this report the first question set out by NICE in the guideline scope.

Question: How cost effective are community engagement approaches at improving health and wellbeing and reducing health inequalities?

3.2. Data extraction and quality assessment

To undertake our analysis we have followed the methods for reviewing economic evaluations set out in the Methods for the development of NICE public health guidance18 and therefore key elements of our findings and discussion are the applicability and limitations of the included studies. The applicability and limitations of the studies are used to assess the quality of the studies and facilitate the drawing of conclusions about the cost-effectiveness of interventions. We have located the 22 studies included in Chapter 7 "Synthesis IV: economic analysis of costs and resources" of the EPPI review and have extracted the relevant data into a data extraction table that was developed based on Appendix K3 "Example of evidence table for economic evaluation studies" of the NICE manual. One reviewer carried out the data extraction of most papers with a small sample of papers (five) analysed by two reviewers in order to pilot the data extraction tables and ensure all the items were understood correctly.

In our review, we have also appraised the quality of the 22 economic studies as per the Appendix I "Quality appraisal checklist – economic evaluations" of the NICE methods manual. We have used the recommended checklist for each type of economic evaluation, that is, the CCA, CBA, CEA and CUA checklists. NICE checklists serve to assess the methodological quality of the study in the following way:

- **Very serious limitations:** the study fails to meet one or more quality criteria and this is very likely to change the conclusions about cost-effectiveness. Such studies would usually be excluded from further consideration;
- **Potentially serious limitations:** the study fails to meet one or more quality criteria and this could change the conclusions about cost-effectiveness;
- **Minor limitations**: the study meets all quality criteria, or fails to meet one or more quality criteria but this is unlikely to change the conclusions about cost-effectiveness.

[18] NICE, 2012, Methods for the development of NICE public health guidance (third edition) . URL http://www.nice.org.uk/article/PMG4/chapter/1%20Introduction.

NICE checklists can also be used to judge the overall applicability of the study in the context of the guidance:

- **Not applicable:** the study fails to meet one or more applicability criteria and this is very likely to change the conclusions about cost effectiveness. Such studies would usually be excluded from further consideration;
- **Partially applicable:** the study fails to meet one or more applicability criteria and this could change the conclusions about cost effectiveness;
- **Directly applicable:** the study meets all applicability criteria, or fails to meet one or more applicability criteria but this is unlikely to change the conclusions about cost-effectiveness.

Based on the results of the quality appraisal, we determined the quality rating of each study. The quality rating set out in the methods guidance is as follows:

- **(++):** all or most of the checklist criteria have been fulfilled; where they have not been fulfilled the conclusions are very unlikely to alter;
- **(+):** some of the checklist criteria have been fulfilled; where they have not been fulfilled, or not adequately described, the conclusions are unlikely to alter;
- **(-):** few or no checklist criteria have been fulfilled and the conclusions are likely or very likely to alter.

To increase reliability, two reviewers have assessed the quality of a small sample of studies and discussed and resolved any issues or disagreements. One reviewer completed the assessment of the quality of the studies with a 10% sample of studies double-assessed by two independent reviewers. Any issues arising while assessing quality were discussed among two reviewers and any disagreements resolved by consensus.

The above methods and tools to assess the quality of the economic evaluations included in the EPPI review differ from the ones used by O'Mara-Eves et al. but, as per the NICE guidance, we consider them more appropriate for assessing the quality of studies investigating the cost-effectiveness of community engagement approaches. Also, although the methods and tools to quality assess the included studies are explained in the O'Mara et al. (2013) study, it is not clear whether a risk of bias assessment was applied by the authors to all 22 economic studies as the quality assessment of some of the included studies is not reported in the EPPI review. In the abstract of the report, O'Mara-Eves et al. assert that they have used an economic evaluation checklist for assessing economic evaluations and, in the chapter on methods, state that they had planned to assess the quality of economic evaluation studies using the Consensus on Health Economic Criteria (CHEC) list, However, they add that "no such evaluations were identified".

It seems therefore that the methodological quality of some studies has not been assessed. For only seven of the studies included in Chapter 7 -namely the outcome evaluations (controlled trials)-, was the methodological quality assessed by the EPPI review team using an adaptation of the Cochrane risk of bias assessment tool. Using this tool, O'Mara-Eves et al. (2013) examined the studies in three

dimensions: selection bias, attrition bias and selective reporting bias and concluded whether the study's methodology was sound or not sound. For a study to be classified as 'sound', all three types of bias had to be avoided; otherwise, the study was considered 'not sound'.

In the next section (Section 4.0) we include the results of the EPPI review team's quality assessments. There are some discrepancies in our quality assessment and the one carried out by O'Mara-Eves et al. but we consider that the discrepancies are expected because, while they assessed the risk of bias of the primary research studies, the focus of our appraisal was on the economic analysis that was carried out by the authors of the included studies.

As noted above, to undertake this review we have maintained the same classification of interventions as per the EPPI review, that is:

- Peer/lay delivered interventions;
- Collaboration between health and other statutory services and communities;
- Interventions centred on the concept of empowerment.

The categorisation of economic studies undertaken by the EPPI review team – allocating studies to cost-consequence analysis, cost-effectiveness analysis, cost-benefit analysis and cost-utility analysis - has also remained unchanged for the purposes of this précis. For reasons of comparability it was considered preferable to retain the original categorisation by type of evaluation although studies may not always have satisfied the conventional criteria for their assigned evaluation type. For example Zhou et al. 2003 were classified both as CBA and CEA. Based on the definitions presented in the Glossary, we consider the latter study to be a CEA. Also Pinkerton et al. 1998 was classified as CEA and CUA. In our view, Pinkerton and colleagues conducted a cost-effectiveness analysis.

4. Findings and discussion

In this section we present the findings of our analysis of the economic studies included in the EPPI review. We first discuss the study design and the type of economic analysis of the included studies, the overall quality assessment and the applicability of the evidence. Later in this section we discuss all the studies in more detail, presented according to the type of economic analysis for comparability purposes. O'Mara et al. have presented the interventions in terms of their theoretical approach to community engagement, but we considered that presenting studies by type of economic would provide a more suitable framework for drawing conclusions on cost-effectiveness and informing our future modelling work.

Overall there is limited evidence on the cost-effectiveness of community engagement interventions. All studies included in the précis are primary research studies as this was one of the inclusion criteria of the EPPI review. 50% of the studies - 11 out of 22 studies – were classified as cost-consequence analysis (CCA) and were primarily concerned with evaluating the effectiveness of community engagement interventions (Barnet et al. 2002; Borgia et al. 2005; Brown et al. 2002; Brown et al. 2005; Campbell et al. 2008; Ell et al. 2002; Kumpusalo et al. 1996; Long et al. 1995; Pasket et al. 2006, Pugh et al. 2002; Reijneveld et al. 2003). In terms of the overall quality assessment, ten studies are partly applicable, while the study by Campbell and colleagues (2008) is directly applicable. One study, by Borgia et al. (2005), has very serious limitations; while the other ten studies have potentially serious limitations.

Six studies are categorised as cost-effectiveness analyses (CEA). Of these, only two have minor limitations (McIntosh et al. 2009; Pinkerton et al. 1998) and three have potentially serious limitations (Andersen et al. 2002, Secker-Walker et al. 2005, Zhou et al. 2003). Five papers are regarded as either directly applicable (McIntosh et al. 2009) or partly applicable (Andersen et al. 2002, Pinkerton et al. 1998, Secker-Walker et al. 2005, Zhou et al. 2003). The cost-effectiveness study by Fried et al. (2004) was excluded from the review as we regarded the paper as not applicable and had very serious limitations. The programme discussed by Fried et al., however, is also assessed by Frick et al. 2004.

Three studies (Krieger et al. 2005; Lindqvist et al. 2001; Office of the Deputy Prime Minister, 2004) were classified by O'Mara-Eves and colleagues as cost-benefit analyses (CBA); all had potentially serious limitations and only the report by the Office of the Deputy Prime Minister was regarded as directly applicable; the other two were partly applicable. Finally, the two cost-utility analysis (CUA) studies each have minor limitations and are considered as partly (Frick et al. 2004) or directly applicable (Richardson et al. 2008), respectively.

Costs reported in the studies do not necessarily represent an actual intervention cost. In some cases (e.g. Fried et al. 2004) costs were costs of incentives to reimburse the expenses, rather than the actual cost of the intervention.

A brief overview of the quality appraisal of the included studies is presented in Table 1 below. In the table we have presented the studies according to the type of economic analysis, intervention, health topic area, the conclusions about cost-effectiveness, the theoretical approach to community engagement reflected in the intervention belong to, our assessment of the limitations and applicability of the studies following the NICE methodological guidelines and, where available, the result of the risk of bias assessment reported in O'Mara-Eves et al. Where the risk of bias result is not presented in the EPPI review, we have stated that the information is not reported (N/R). A detailed summary of all included studies is presented in Section 4.5 in Tables 2-5.

Table 1: Summary table of quality appraisal of all included studies

	Study	Type of analysis	Type of intervention	Intervention/Health topic	Limitations	Applicability	Risk of bias result[19]	Conclusion on cost-effectiveness
1	Andersen et al. 2002	CEA	Peer/lay delivered interventions	Mammography promotion	Potentially serious limitations (+)	Partly applicable	N/R	The intervention can be cost-effective at certain mammography cost (US setting)
2	Barnet et al. 2002	CCA	Peer/lay delivered interventions	Impact of volunteers on health outcomes of young mothers	Potentially serious limitations (+)	Partly applicable	N/R	The intervention can be effective in improving some parenting outcomes but not parental distress. No conclusion has been made on cost-effectiveness (US setting)
3	Borgia et al. 2005	CCA	Peer/lay delivered interventions	Peer led HIV prevention at schools	Very serious limitations (-)	Partly applicable	N/R	The intervention has no marked benefits compared to the comparator, (only in terms of improvements in knowledge) and was more costly. Conducting a cost-effectiveness analysis was recommended by the authors (Italian setting)
4	Brown et al. 2002	CCA	Collaboration between health and other statutory services and communities	Diabetes education with cultural component	Potentially serious limitations (+)	Partly applicable	N/R	The intervention was effective in achieving certain diabetes outcomes at modest costs, however, no cost-effectiveness analysis was conducted and it is difficult to draw conclusions about its cost-effectiveness (US setting)
5	Brown et al.	CCA	Collaboration between	Compressed diabetes	Potentially serious	Partly applicab	N/R	This intervention can be implemented at lower costs than the intervention

[19] As per Appendix 6 of O'Mara et al. (2013) review

	Study	Type of analysis	Type of intervention	Intervention/Health topic	Limitations	Applicability	Risk of bias result[19]	Conclusion on cost-effectiveness
	2005		health and other statutory services and communities	educational sessions (compressed version of intervention outlined in Brown et al. 2002)	limitations (+)	le		by Brown et al. 2002 achieving the same effectiveness. No conclusion about cost-effectiveness has been made (US setting)
6	Campbell et al. 2008	CCA	Peer/lay delivered interventions	Smoking prevention n adolescence	Potentially serious limitations (+)	Directly applicable	N/R	The intervention is effective at modest costs, however, no conclusion has been made about its cost-effectiveness (UK setting)
7	Ell et al. 2002	CCA	Peer/lay delivered interventions	Abnormal cervical screen follow-up	Potentially serious limitations (+)	Partly applicable	N/R	The intervention has increased adherence to services, but no conclusion has been made about the cost-effectiveness (US setting)
8	Frick et al. 2004	CUA	Collaboration between health and other statutory services and communities	Older volunteers providing help for public elementary schools	Minor limitations (++)	Partly applicable	N/R	The intervention proved to be expensive in older adults but can be cost-effective or cost-saving if the long-term benefits are achieved for children (US setting)
9	Fried et al. 2004	CEA	Collaboration between health and other statutory services and		Very serious limitations (-)	Not applicable	Not sound	The intervention has achieved certain positive results, however, no conclusion on cost-effectiveness has been made (US setting)

	Study	Type of analysis	Type of intervention	Intervention/Health topic	Limitations	Applicability	Risk of bias result[19]	Conclusion on cost-effectiveness
			communities					
10	Krieger et al. 2005	CBA	Interventions centred on the concept of empowerment	Decrease to exposure to indoor asthma triggers (high intensity group)	Potentially serious limitations (+)	Partly applicable	Sound	The intervention can reduce asthma symptom days and can be cost-saving and improve quality of life of caregivers (US setting)
11	Kumpusalo et al. 1996	CCA	Interventions centred on the concept of empowerment	Health promotion	Potentially serious limitations (+)	Partly applicable	Not sound	The certain health indicators have improved. The intervention may represent a value for money (Finnish setting)
12	Lindqvist et al. 2001	CBA	Collaboration between health and other statutory services and communities	Injury prevention	Potentially serious limitations (+)	Partly applicable	Sound	The intervention achieved positive net benefits and decreased negative health outcomes. The intervention is thought to be cost-effective (Swedish setting)
13	Long et al. 1995	CCA	Peer/lay delivered interventions	Breastfeeding promotion	Potentially serious limitations (+)	Partly applicable	Sound	No cost-effectiveness analysis was conducted. However, the intervention in thought to be effective in improving breastfeeding (US setting)
14	McIntosh et al. 2009	CEA	Peer/lay delivered interventions	Improved parent-infant interaction	Minor limitations (++)	Directly applicable	N/R	The intervention is considered to be cost-effective at various Willingness To Pay (WTP) thresholds (UK setting)
15	Office of	CBA	Interventions	Neighbourhood	Potentially	Directly	N/R	The Scheme can be highly cost-

	Study	Type of analysis	Type of intervention	Intervention/Health topic	Limitations	Applicability	Risk of bias result[19]	Conclusion on cost-effectiveness
	the Deputy Prime Minister 2004		centred on the concept of empowerment	renewal initiative (Neighbourhood Wardens Scheme)	serious limitations (+)	applicable		effective and economic case can be stronger if health-related outcomes were included (UK setting)
16	Paskett et al. 2006	CCA	Peer/lay delivered interventions	Mammography promotion	Potentially serious limitations (+)	Partly applicable	N/R	The intervention achieved higher mammography rates, however no conclusion on cost-effectiveness has been made
17	Pinkerton et al. 1998	CEA/CUA	Peer/lay delivered interventions	HIV risk reduction	Minor limitations (++)	Partly applicable	N/R	Authors consider the intervention to be cost-effective (US setting)
18	Pugh et al. 2002	CCA	Peer/lay delivered interventions	Increased duration of breastfeeding	Potentially serious limitations (+)	Partly applicable	Sound	The intervention can improve breastfeed duration and can potentially reduce the cost of support. The costs were higher in the intervention group compared to usual care. No conclusion on cost-effectiveness (US setting)
19	Reijneveld et al. 2003	CCA	Collaboration between health and other statutory services and communities	Promotion of health and physical activity	Potentially serious limitations (+)	Partly applicable	Sound	Improvements have been seen in some outcomes (not in all). No conclusion on cost-effectiveness has been made (Dutch setting)
20	Richardson et al.	CUA	Peer/lay delivered	Chronic disease self -	Minor limitations	Directly applicab	N/R	Authors consider the intervention to be cost effective at WTP threshold

	Study	Type of analysis	Type of intervention	Intervention/Health topic	Limitations	Applicability	Risk of bias result[19]	Conclusion on cost-effectiveness
	2008		interventions	management program	(++)	le		£20,000/QALY gained (UK setting)
21	Secker-Walker et al. 2005	CEA	Collaboration between health and other statutory services and communities	Quit smoking	Potentially serious limitations (+)	Partly applicable	N/R	The intervention proved to be cost-effective (US setting)
22	Zhou et al. 2003	CEA/CBA	Collaboration between health and other statutory services and communities	Promotion of hepatitis B vaccinations	Potentially serious limitations (+)	Partly applicable	Not sound	The intervention was cost-effective and cost-beneficial although higher net savings for cost of illness averted were found in the comparator, a media-led intervention (US setting)

As explained in the methodology section above (Section 3.0), there are discrepancies in our quality assessment and the one carried out by O'Mara-Eves et al. We consider that the discrepancies are to be expected because, while they assessed the risk of bias of the primary studies, our focus was on the economic analysis that was carried out by the authors of the paper. Regardless of the risk of bias result presented in their review, O'Mara-Eves et al. (2013) acknowledge that the evidence base supporting the effectiveness and cost-effectiveness of community engagement strategies is fragmented and of limited quality as most of the included analysis have methodological limitations. They point out that:

- Only eight studies (Zhou et al. 2003; Borgia et al. 2005; McIntosh et al. 2009; Office of the Deputy Prime Minister 2004; Pinkerton et al. 1998; Secker-Walker 1996 ; Frick et al. 2004)) included some form of stochastic or sensitivity analysis to address uncertainty around effectiveness and cost estimates;
- No study appeared to undertake any form of subgroup analysis;
- Only five studies (Zhou et al. 2003; Borgia et al. 2005; Krieger et al. 2005; McIntosh et al. 2009; (Lindqvist et al. 2001) looked at productivity costs; and
- Only three studies (Long et al. 1995; Pugh et al. 2001; Krieger et al. 2005) considered costs to family members.

Based on our own quality assessment, we agree with O'Mara-Eves et al. appraisal of the economic evidence. We present now all the included interventions grouped according to the type of economic analysis.

4.1. Cost-consequence analyses (CCA)

The cost-consequence analysis studies are summarised in Table 2. The interventions investigated vary among the studies, as do settings and populations. Seven studies were conducted in the United States (US) and four studies were conducted in Europe (one of them in the UK). Interventions assessed in the studies covered nearly all age groups and socio-economic groups. All eleven studies provide some information on the cost of the interventions although not always in a form easily amenable to the calculation of a cost-effectiveness ratio (cost per recipient of the intervention). It should be noted that overall the intervention costs are not directly comparable as interventions, populations and settings vary across the studies.

Benefits from these eleven cost-consequence studies are mostly measured by study-specific outcomes and include various measures such as improvements in knowledge of diabetes and HIV, rates of breastfeeding and breastfeeding duration, mammography and physical activity. Some studies also assess levels of adherence to the intervention, parenting stress index, mental health score and life satisfaction levels. These outcomes were mostly measured in terms of percentages or as an odds ratio (smoking prevalence).

Community engagement interventions in eight CCA studies are peer or lay delivered (Barnet et al. 2002; Borgia et al. 2005; Campbell et al. 2008; Ell et al. 2002; Long et al. 1995; Paskett et al. 2006; Pugh et al. 2002; Reijneveld et al. 2003). Collaboration between health and other statutory services and communities was implemented in two CCA studies (Brown et al. 2002 and 2005) and empowerment in one paper only (Kumpusalo et al. 1996). A summary of these eleven studies is presented below.

Barnet and colleagues (2002) conducted primary research in Baltimore, US to evaluate the impact of home visitation along with usual services (provided by academics, parenting classes, day care and health care) on adolescent parenting outcomes. The intervention was delivered by community female volunteers to adolescent women aged 12 to 18 years with a baby or who were pregnant in an African American community. Cost per volunteer was $200 per year to cover transportation expenses. The intervention effect was measured in terms of parenting stress index, parenting behaviour, mental health score, social support satisfaction and social support need. The authors observed no improvements in parental distress, mental health or satisfaction with social support. Modest improvements were observed in parental outcomes such as expectations of the baby, role reversal and parent-child interaction. They conclude that this programme can be effective in providing parenting education, but it is not an alternative to professionally delivered schemes considering that the costs of the volunteer home visit ($3,704-$5,245 for 1.5 years of service) were not considerably lower than those of programmes delivered by professionals and paraprofessionals ($5,178-$7,681 for 2.5 years). The authors comment that "moreover, the intervention may have caused participants to experience a greater need for social support" (page 1221). This study is considered to have potentially serious limitation due to its findings and lack of comprehensiveness in the economic analysis. This study is partly applicable due to country health care system differences.

Borgia et al. 2005 conducted a primary study in Italy among students in the final two years of public high school education (median age 18). The authors assessed the effectiveness of a peer led AIDS education programme (intervention group) compared with a teacher led education programme (control group). Cost of the peer led education programme was nearly twice as high as the teacher led programme €21,500 (€28.2 per target student involved in the peer led group) and € 10,800 (€11.6 per target student in the teacher led group) respectively. Borgia and colleagues observed 6.7% greater improvements in HIV knowledge in the intervention relative to the control group. No changes were observed in sexual behaviour in any of the groups. The authors suggest conducting a cost-effectiveness analysis before this intervention can be recommended. Due to a lack of economic analysis along with a number of limitations summarized by the authors (small sample size, no special education curriculum for this analysis and an issue with the selection of peer leads) we classify this paper as a study with very serious limitations. In addition to the weaknesses discussed by the authors, the effectiveness of the intervention was not well established and costs are not presented in sufficient detail. This study is partly applicable as it is not conducted in the UK.

A peer led intervention to prevent smoking uptake in secondary schools in the UK was studied by Campbell and colleagues (2008). A Stop Smoking In Schools Trial (ASSIST) programme, with an average

cost of £27 per student, was assessed against the use of usual smoking education and tobacco control policies only (control group) among students aged 12-13. Smoking prevalence was measured among the two groups (intervention and control) with two years of follow-up. Smoking rates were significantly lower after one year of follow-up in the intervention versus the control group. Rates were lower, but less markedly after two years follow-up. No conclusion has been made on the cost-effectiveness of the programme. However, the effectiveness of the intervention was established. We believe that the authors did not intend to conduct an economic analysis, but were concerned primarily with testing the effectiveness of the programme. The costs of intervention receive only a brief mention without breaking it down into components (only travel was separated). As previously noted, no cost-effectiveness results were reported despite sufficient data being collected. Taking these factors into consideration, we believe that the study by Campbell and colleagues has potentially serious limitations but is directly applicable.

The Screening Adherence Follow-Up Programme (SAFe) was delivered by peer counsellor females with relevant knowledge to women with an abnormal cervical cancer test in the US. The intervention resulted in an additional 25%-26% adherence rate at one year compared with usual practice. A satisfaction rate with SAFe services was also measured in targeted women. Ell and colleagues (2002) conclude that this intervention delivered by peer counsellors has the potential to reduce possible barriers to adherence and attitudes to SAFe. The average cost per enrolee per year was $319; no additional costs or benefits of adherence were presented. Due to these weaknesses, we think this paper has potentially serious limitations and is partly applicable.

Long et al (1995) assessed the effectiveness of a breastfeeding promotion programme delivered by peer counsellors. Peer counsellors provided information and support to pregnant Native American women to aid them with breastfeeding experiences and promote breastfeeding instead of artificial baby milk. Long et al. 1995 concluded that at three months postpartum, the breastfeeding rate was higher by nearly 15% than in the control group; however, at six months, breastfeeding was similar in both groups. Breastfeeding duration was also longer in the intervention group. The authors conclude that the cost of two part-time employed counsellors for this project was less than $1,000 whereas the cost of artificial baby milk for all participants which could potentially be saved was $55,188. The authors have not assessed the potential health benefits of breastfeeding and health care cost savings that may occur in the future lives of the babies. Long and colleagues also highlight several cultural barriers for the targeted group and their beliefs on breastfeeding. We believe that this study has potentially serious limitations (due to insufficient health benefits provided) and should be treated with caution. It is partly applicable due to setting and country health system differences. However, the effect of the intervention can be useful for future analysis.

Paskett and colleagues (2006) tested whether mammography attendance has improved in a triracial population of rural North Carolina, US. An educational, face-to-face intervention was delivered in a culturally acceptable manner by a lay health advisor. The authors conclude that delivering the intervention would cost $329,054 and delivering an additional mammogram would cost $4,986. Higher

mammography rates were observed in the intervention group compared with usual care (42.5% versus 27.3%, respectively). An issue about generalizability of the study findings has been raised by the authors as the population targeted were living in rural area, and were on low incomes. Due to these weakness, we believe that this study has a potentially serious limitation and is partly applicable.

Promotion of breastfeeding duration was assessed by Pugh and colleagues (2002). Supplementary home visits and telephone calls along with usual practice (by nurses) were delivered by community health/peer counsellor to low income mothers in the US. The intervention cost was $301 per mother (contact time and mileage only). By including wages paid, the cost of the intervention would increase to $795 per patient, $54 more than usual practice. The total cost of the intervention was $3,840 and in the control group was $3,194, a difference of $646 per mother. As a result of the intervention, fewer visits were recorded to the health care provider. The prescription rate also decreased. Immunization rates and total hospitalization rates were not affected but, in the intervention group, "…on average, 0.1 fewer emergency room visits" were recorded (page 98). The authors did not attempt to cost the health care impacts or benefits of breastfeeding. This paper has potentially serious limitations and is partly applicable.

Reijneveld and colleagues (2003) attempted to assess the effect of a short health education and physical activity intervention on elderly Turkish migrants in the Netherlands. The intervention was delivered by a Turkish peer educator at cost of €1,400 per programme. As a result of the intervention, mental health was improved with an effect size of 0.38 (measured by SF-36). No change in knowledge or physical activity level was observed; however, the result could be affected by cultural beliefs or living conditions. The findings of this study could be useful for further analysis to calculate QALY gains associated with the intervention although, as the authors suggest, "…painstaking cultural adaptations to contents and method of delivery are essential to reach this effect" (page 405). This study carries potentially serious limitations and is partly applicable.

The interventions summarized in the eight studies discussed above are all peer/lay delivered. In the next few paragraphs we will review two papers by Brown et al. 2002 and 2005 (a subsequent analysis of an adapted version of the earlier programme) that discuss diabetes self-management delivered through a collaboration between health and other statutory services and communities and a study by Kumpusalo and colleagues (1996) assessing the impact of the Healthy Village Study programme in Finland.

Brown and colleagues (2002) analysed a diabetes self-management programme among Mexican-Americans in Texas, US. The intervention was delivered by nurses, dieticians, and community workers to Mexican-Americans with type two diabetes at a cost of $384 per person. This cost does not include the cost of community sites, the cost of monitoring supplies or overhead charges. The intervention lasted for 52 hours over a year and increased knowledge in diabetes, fasting blood glucose (FBG) and HbA1c (both are physiological indicators). A reduction of intervention hours from 52 hours to 22 hours was analysed in the subsequent analysis (Brown et al. 2005). The authors found a similar effect to their previous study, but with a lesser cost of $131/person compared to $384 per person in the extended

study (52 hours). Both studies lack a formal economic evaluation, but the costs presented could be useful for further analysis, Brown et al. 2002 and 2005 have potentially serious limitations and are partly applicable.

The last paper in this category is a study by Kumpusalo et al. 1996. The authors of the paper attempt to assess the impacts of the Healthy Village Study programme. The programme is aimed at working aged people in Finnish villages and is centred on the concept of empowerment. Outcomes were measure in terms of vitamin C concentrations, systolic and diastolic blood pressure, cholesterol levels and, body mass index (BMI). The intervention has resulted in improvements in cholesterol, vitamin C concentration and systolic blood pressure levels. No change was observed in diastolic blood pressure and BMI. An annual cost per additional village was £750. This study is partly applicable as it is conducted outside the UK and carries potentially serious limitations due to a lack of a formal cost-effectiveness analysis.

We conclude that these eleven CCA studies were all partially or directly (Campbell et al. 2008) applicable primarily on the basis of setting. In addition, all the reviewed studies contain to some extent useful information for future modelling purposes, such as costs or effect sizes. However, all of them have potentially serious limitations or very serious limitations (Borgia et al. 2005) and should be treated with caution when used for further analysis.

4.2. Cost-effectiveness analyses (CEA)

Of the five studies included in the review (the sixth paper, Fried et al. 2004, was excluded) only one study was conducted in the UK (McIntosh et al. 2009) and the rest in the United States (Andersen et al. 2002; Pinkerton et al. 1998; Secker-Walker et al. 2005; Zhou et al. 2003).

Only one study (Zhou et al. 2003) assessed an intervention based on a collaboration between health and other statutory services and communities. The authors presented benefits in terms of the number of immunizations and life years saved (LYS). The study by Zhou and colleagues (2003) has adopted aspects of both cost-effectiveness and cost-benefit analyses and presented a cost/benefit ratio for interventions in the paper. Quality adjusted life years (QALYs) were also calculated. The authors of the study concluded that both the media education which was assessed and, to a lesser degree, community mobilization interventions to promote hepatitis B vaccinations among Vietnamese-American children and adolescents in Houston and Dallas proved cost-effective and cost-beneficial. However, no consideration was given to adverse effects of the vaccination. Our review also highlighted an additional gap in the study. The paper by Zhou and colleagues does not take into account the impact of the media and community mobilization campaign on the rest of the population (non-target population). These results need to be considered with caution as the study presents potentially serious limitations and is only partly applicable due to specific population characteristics (Vietnamese-American).

The remaining four studies assess peer/lay delivered interventions and also analyse the benefits of interventions in terms of LYS, with incremental cost-effectiveness ratios (ICERs) reported. The cost-benefit ratios derived in the studies are not directly comparable as interventions and their benefits differ across the studies.

Andersen et al. 2002 analysed the cost-effectiveness of mammography promotion by volunteers in rural US communities using three different approaches: individual counselling, community activities and a combined intervention including both. Of these three types, they concluded that the community activities intervention was the most cost-effective, at approximately $2,000 for each additional regular mammography user in the community. According to the authors, the cost per year of life saved associated with mammography promotion was approximately $56,000 per year of life saved, but they also note the findings of exploratory analyses suggesting that the most cost-effective method of promoting mammography use may vary with the target population. However, the authors point out that there might be inaccuracies around self-reported data for the amount of time spent or number of targets on study activities. No benefits of mammography uptake have been presented. The results of this study also need to be considered with caution as it has potentially serious limitations and is only partly applicable due to geographical differences.

McIntosh et al. 2009 evaluated the cost-effectiveness of an intensive home visiting programme directed at vulnerable families during the antenatal and postnatal periods in the UK. McIntosh and colleagues concluded that their study provides evidence suggesting that, within the context of regular home visits, specially trained home visitors can increase maternal sensitivity and infant cooperativeness and are better able to identify infants in need of removal from the home for child protection. However, the authors state that they are not in a position to establish whether the benefits of the intervention justify the societal cost of £3,246 per woman. According to McIntosh et al., the results of their study suggest that if decision makers were willing to pay £1,400 to reduce exposure to abuse and neglect by one month, the home visiting intervention would have a 75% probability of being cost-effective. A willingness to pay of £2,700 gives it a 90% probability, and £3,100 a 95% probability that the intervention would be cost-effective. This study has only minor limitations, as identified by the authors themselves, and is regarded as directly applicable.

Pinkerton et al. 1998 evaluated the cost-effectiveness of a community-level HIV prevention intervention that used peer leaders to endorse risk reduction among gay men in Mississippi, US. They conclude that, for this intervention, the cost of HIV prevention was more than offset by savings in averted future medical care costs. They assert that community-level interventions to prevent HIV transmission that use existing social networks can be highly cost-effective. The results of this study may not be generalizable to other populations and implementation costs may be different in other areas. As a result of these weaknesses, this study is considered to have minor limitations; however, it is regarded as partly applicable as it is conducted outside the UK.

Finally, Secker-Walker et al. 2005 evaluated the cost-effectiveness of a four year, multifaceted, community based research project to help women quit smoking in the US. According to the authors, their evaluation generates cost-effectiveness ratio, expressed as dollars per life-year saved, which compare favourably with other smoking cessation interventions for women, such as physician advice, adjuvant use of nicotine gum, or the transdermal nicotine patch. However, considering the limitations summarized by the authors, such as possibly overstating the cost per life year saved of the project (other limitations are reported in the evidence table), the results of this study need to be considered with caution. This paper may therefore have potentially serious limitations and is partly applicable.

All five cost-effectiveness studies have presented a breakdown of intervention costs and can be used for further analysis. However, the costs have to be converted into the desired currency and inflated for the desired year. A summary of these studies is presented in Table 3.

4.3. Cost-benefit analysis (CBA)

Three studies (Krieger et al. 2005; Lindqvist et al. 2001; Office of the Deputy Prime Minister 2004) were classified as cost-benefit analysis. Two interventions focus on the concept of empowerment and one investigates a collaboration between health and other statutory services and communities (Lindqvist et al. 2001). These studies are summarized in Table 4.

Krieger et al. (2005) assessed the effectiveness of a community health worker intervention focused on reducing exposure to indoor asthma triggers. They targeted children with asthma in the United States and presented outcomes/benefits in terms of quality of life. A per participant cost was also presented. This paper presents useful information in terms of cost per participant, costs of hospital and emergency admission cost reductions and can be used for future analysis. The authors conclude that the high-intensity intervention may be cost saving relative to the low-intensity intervention they implemented. The report summarizes savings in urgent care costs (hospital admissions, emergency department visits, and unscheduled clinic visits) during a 2-month period and they indicate that these bimonthly savings are likely to persist for several years. Although this study did not collect follow-up data on both groups, the authors report that the use of urgent care remained low among the high-intensity group for at least 6 months following the intervention. This study does not include a usual care group (only a high intensity group and a low intensity group). The authors also summarize study limitations with regard to participant blinding and possible biases. As a result of these limitations, the study findings need to be considered with caution as the study presents potentially serious limitations and is partly applicable due to its limitations and setting.

Lindqvist et al. (2001) calculated the costs and benefits associated with a safe community injury prevention programme delivered by councils in Sweden among two risk populations – children and teenagers and the elderly. Lindqvist and colleagues estimate the net benefits of the intervention to be around 10 million SEK as the cost of injuries decreased from 116 million SEK to 96 million SEK with an

intervention cost of approximately 10 million SEK. The intervention resulted in a decrease in the incidence of healthcare treated injuries of 13%. Although the authors conclude that the assessed community injury prevention programme is cost-effective, they present intervention benefits only in terms of injury incidence rather than the actual changes in quality of life or other health outcomes. This restriction, along with a number of limitations identified by the authors, such as no long-term follow up and an inability to capture valuable consequences, can be considered as weaknesses of the study. We believe that the study presents potentially serious limitations and is partly applicable as it is conducted outside the UK.

The Neighbourhood Wardens Scheme evaluation (Office of the Deputy Prime Minister 2004) assesses an intervention that focuses on the concept of empowerment and presents the cost of the programme over 2.5 years. In the study, the costs are not assessed against usual practice (standard scheme). Benefits are presented in terms of offence and anxiety rates and other reported outcomes. The authors conclude that the programme is cost-beneficial although they acknowledge that the methods for calculating cost-benefits are not robust. The paper calculates the monetary cost of crime reduction in warden areas. According to the authors, a residents' survey suggests that there were over 286,000 fewer offences over the two-and-a-half years of the programme. Considering that Home Office figures suggest that the average offence has a cost to society of about £2,000, the evaluators calculate that the Net Present Value (present value of benefits minus present value of costs) of the programme is £575.5 million The authors acknowledge that the Home Office calculation may be considered an over-simplification, but it does at least provide a single figure to use in the analysis of costs and benefits. . Taking into account the cost calculation method and limited availability of consequences, the results need to be considered with caution as the study presents potentially serious limitations. Nevertheless, it is directly applicable.

4.4. Cost-utility analysis (CUA)

Two CUA studies are summarized in Table 5. Frick et al. (2004) and Richardson et al. (2008) have assessed peer/lay delivered interventions. Both Frick et al. (2004) and Richardson et al. (2008) studies present ICERs as well as benefits in terms of QALY gains. Costs are also broken down into unit costs and items of resource use and could be useful for further analysis. Frick et al. (2004) estimated the cost-effectiveness of a programme designed to harness the social capital of an aging society to improve outcomes for public elementary schools in Baltimore, USA. The authors also aimed to describe the relationship between children experiencing increased expected lifetime earnings through improved educational attainment resulting from exposure to the programme and the programme's costs and cost-effectiveness. The conclusions of the study are that the programme appears expensive for the older adults' health improvements, but requires only small long-term benefits to the target children to make the program cost-effective or cost-saving. This study has only minor limitations as summarized by the authors. The limitations include the assumption that the volunteer involvement ended after 1 year, and that long-term participation would not enhance short-term benefits. No monetary value has been

assigned to improved retention and performance for teachers, benefits for participants, or potential long-term community benefits. All limitations are summarized in evidence table is presented in Appendix A. This study by Frick and colleagues is regarded as partly applicable as it is conducted outside the UK.

Richardson et al. (2008) assess the cost-effectiveness of the Expert Patients Programme (EPP) intervention compared to a treatment as usual alternative. The EPP is a lay-led group intervention designed to enable participants with a chronic condition to develop appropriate self-care skills in community settings in England. The authors concluded that the EPP intervention evaluated in this trial is very likely to provide a cost-effective alternative to usual care in people with long-term conditions. The authors present benefits in terms of QALY gains (0.020) as well as cost per patient (£250 per patient). At a willingness to pay (WTP) threshold of £20,000 per QALY gained, EPP has a 94% probability of being cost-effective. This study has only minor limitations (the time horizon is restricted to 6 months) and is regarded as directly applicable.

4.5. Detailed summery tables

Here we present the summary tables including all relevant details of the studies discussed above.

Table 2: Cost-consequence analysis studies

Type of economic analysis: Cost-consequence analysis										
Study		**Type of community engagement**	**Intervention**	**Comparator**	**Population**	**Country/ setting**	**Cost**	**Benefits**	**Overall quality assessment**	**Applicability**
1	Barnet et al. 2002	Peer/lay delivered	Impact of volunteers on health outcomes of young mothers	Usual services	Adolescent female mothers 12-18	USA/urban, homes	Cost per volunteer $200, per teenager $3,704-$5,245	Parenting stress index, mental health score, satisfaction rate	Potentially serious limitations	Partly applicable
2	Borgia et al. 2005	Peer/lay delivered	Peer led HIV prevention at schools	Teacher led	Students in final 2 years of high-schools	Italy/urban, school	(€2004) per target student I: €28.2, C: €11.6	Improvement in knowledge of HIV	Very serious limitations	Partly applicable
3	Brown et al. 2002	Collaboration between health and other statutory services and communities	Diabetes education with cultural component	Usual care	Mexican Americans with type 2 diabetes aged 35-70	USA, Texas, county	Per person: $384	HbA1c, FBG, Diabetes knowledge	Potentially serious limitations	Partly applicable
4	Brown et al. 2005	Collaboration between health and other statutory services and communities	Compressed diabetes educational sessions	Extended sessions	Mexican Americans with type 2 diabetes aged 35-70	USA, Texas, county	Extended care: $384/person Compressed: $131/person	HbA1c, FBG, Diabetes knowledge	Potentially serious limitations	Partly applicable
5	Campbell et al. 2008	Peer/lay delivered	Smoking prevention in adolescence	Usual education	Students aged 12-13	UK, schools	I: £27/ student £4,700/school	Odds ratio for smokers/ non-smokers	Potentially serious limitations	Directly applicable
6	Ell et al. 2002	Peer/lay delivered	Abnormal cervical screen follow-up	Usual follow up services	Women, majority Hispanic	LA, USA	$319 per enrolee for 1 year	Adherence levels	Potentially serious limitations	Partly applicable
7	Kumpusalo et al. 1996	Empowerment	Health promotion	No intervention	Working age people (20-64)	Finland	Cost per participant £40	Reduction in cholesterol rates	Potentially serious limitations	Partly applicable

Type of economic analysis: Cost-consequence analysis										
Study		Type of community engagement	Intervention	Comparator	Population	Country/ setting	Cost	Benefits	Overall quality assessment	Applicability
8	Long et al. 1995	Peer/lay delivered	Breastfeeding promotion	Usual services	Pregnant women	USA	$1,000/ year, per peer	Breast--feeding rates and duration	Potentially serious limitations	Partly applicable
9	Paskett et al. 2006	Peer/lay delivered	Mammography promotion	Letter and brochure	White, Native American, African American women	Robeson County, NC, USA/rural	I: $329,054	Higher mammography rates	Potentially serious limitations	Partly applicable
10	Pugh et al. 2002	Peer/lay delivered	Increased duration of breastfeeding	Usual care	Low income mothers	USA, hospitals, homes	($1999) I: $795	Breast-feeding rates	Potentially serious limitations	Partly applicable
11	Reijneveld et al. 2003	Collaboration between health and other statutory services and communities	Promotion of health and physical activity	“Ageing in the Netherlands”	Turkish immigrants aged 45 and over	The Netherlands	Per programme €1,400	Impact on physical activity	Potentially serious limitations	Partly applicable

Table 3: Cost-effectiveness analysis studies

Type of economic analysis: Cost-effectiveness analysis												
Study		**Type of community engagement**	**Intervention**	**Comparator**	**Population**	**Country /setting**	**Cost**	**Benefits**	**Other benefits**	**ICER**	**Overall quality assessment**	**Applicability**
1	Andersen et al. 2002	Peer/lay delivered	Mammography promotion	No intervention	Females 50-80	USA/rural communities	($1995) per intervention $31.74-$49.02	NR	Effectiveness of intervention 1.6%-2.5%	$56,000	Potentially serious limitations	Partly applicable
2	McIntosh et al. 2009	Peer/lay delivered	Improved parent-infant interaction	Standard care	Women in antenatal period	UK, homes	(£2004) I: £7,120, C: £3,874	NR	Maternal sensitivity and infant cooperativeness	£3246/ 0.059 = £55 016	Minor limitations	Directly applicable
3	Pinkerton et al. 1998[20]	Peer/lay delivered	HIV risk reduction	No intervention	Gay men	Biloxi, Mississippi, USA	($1999) I cost $17,150; $65,000/ infection averted	Just under 3 QALYs	Intervention prevents 0.262 infections	$65,000	Minor limitations	Partly applicable
5	Secker-Walker et al. 2005	Collaboration between health and other statutory services and communities	Quit smoking	No intervention	Women aged 18-64 years	USA	($2002) I: $1,971,480	LYS 3,870	NR	I: $/LYS 509. Direct $/LYS 1,184; Total $/LYS 1,772	Potentially serious limitations	Partly applicable
6	Zhou et al. 2003[21]	Collaboration between	Promotion of hepatitis	A media education	Vietnamese-American	USA/Metropolitan	Media $313,904 and community	Life years saved	Number of immunizatio	C:B 5.26:1 for media	Minor limitations	Partly applicable

[20] Cost-effectiveness/cost-utility analysis. QA form for CEA

Type of economic analysis: Cost-effectiveness analysis												
Study		Type of community engagement	Intervention	Comparator	Population	Country /setting	Cost	Benefits	Other benefits	ICER	Overall quality assessment	Applicability
		health and other statutory services and communities	B vaccinations	campaign and community mobilization campaign	children and adolescents	area	mobilization $169,561		n	intervention and 4.47:1 for community mobilization		

Fried et al. 2004 – not applicable; excluded from the table

We included price year only where it was indicated

Where setting is not indicated, either was not noted in the paper or reviewers could not draw a conclusion

Table 4: Cost-benefit analysis

Type of economic analysis: Cost-benefit analysis												
Study		Type of community engagement	Intervention	Comparator	Population	Country/ setting	Cost	Benefits	B:C	Other benefits	Overall quality assessment	Applicability
1	Krieger et al. 2005	Empowerment	Decrease to exposure to indoor asthma triggers (high intensity group)	Low intensity group	Child 4-12 with asthma	Seattle-King County, USA	($2001) $110 for participation	Quality of life	NR	Symptom days	Potentially serious limitations	Partly applicable
2	Lindqvist et al. 2001	Collaboration between health and other statutory	Injury prevention	NR	Children and adults – high risk group	Motala, Sweden	(1995SEK) total: 10.5m SEK	NR	NR	Injury incidences	Potentially serious limitations	Partly applicable

[21] Cost-effectiveness/cost-benefit analysis. QA form for CEA

		services and communities										
3	Office of the Deputy Prime Minister 2004	Empowerment	Neighbourhood renewal initiative (Neighbourhood Wardens Scheme)	No intervention	Deprived communities	England and Wales	£29.2m over the two-and-a-half years	NR	Net Present Value is £575.5 m	286,000 fewer offences	Potentially serious limitations	Directly applicable

Table 5: Cost-utility analysis

Type of economic analysis: Cost-utility analysis												
Study		**Type of community engagement**	**Intervention**	**Comparator**	**Population**	**Country/ setting**	**Cost**	**Benefits**	**Other benefits**	**ICER**	**Overall quality assessment**	**Applicability**
1	Frick et al. 2004	Per/lay delivered	Older volunteers providing help for public elementary schools	No volunteers	School students	Baltimore, USA/urban	Volunteer was $3,613 - of $7/hour	Mean QALY 8.15. median - 8.25	NA	$50,000/ QALY	Minor limitations	Partly applicable
2	Richards on et al. 2008	Peer/lay delivered	Chronic disease self -management program	Patients on a waiting list	Patients with chronic diseases	England	(£2003-4) intervention £250	Mean QALY I: 0.276, C: 0.258	Anxiety/dep ression levels, mobility, pain	£2,300/Q ALY	Minor limitations	Directly applicable

5. Conclusion

Through this summary of economic studies included in the EPPI review we have tried to answer the question set out by NICE in the guideline scope.

Question 1: How cost effective are community engagement approaches at improving health and wellbeing and reducing health inequalities?

Evidence statement 1: cost-effectiveness of community engagement approaches
Overall there is inconsistent evidence on the cost-effectiveness of community engagement approaches as a whole. **ES1.0 Moderate evidence** from three high quality studies (2 UK, 1 US) and five moderate quality studies (3 US, 1 UK, 1 Sweden) indicates the cost-effectiveness of community engagement approaches in general. In one peer/lay delivered intervention to improve parent-infant interaction, the incremental cost per unit improvement in maternal sensitivity was £2,723 and per unit improvement in infant cooperativeness was £2,033 at mean societal cost of £7,120 for the home intervention. The intervention remains cost-effective under sensitivity analysis. At £16,000 WTP threshold, there was 95% chance of the intervention being cost-effective. (McIntosh et al. 2009 [++]). Another peer/lay delivered intervention prevented 0.262 cases of HIV at cost of US$65,458 per case of HIV averted and saved just under 3 QALYs. The base-case cost-effectiveness ratio resulted in a cost of $65,000. The intervention remained cost-cost-effective under sensitivity analysis. (Pinkerton et al. 1998, [++]). At cost of £1,912 over six months 0.20 incremental QALYs were gained by a peer/lay delivered intervention to improve self-management of chronic diseases compared to control group. At a WTP threshold of £20,000 per QALY gained the intervention had a 94% probability of being cost-effective. The intervention remained cost-cost-effective under sensitivity analysis. (Richardson et al. 2008 [++]). One intervention centred on the concept of empowerment and aimed at decreased exposure to indoor asthma triggers improved caregiver quality of life by 0.58 points and reduced asthma related urgent health care need significantly compared with the control group at an estimated marginal cost of the intervention relative to control of $124,000, or $1,124 per child. (Krieger et al. 2005 [+]). An injury prevention intervention delivered in collaboration between health and other statutory services and communities resulted in positive net benefits of around 10 million SEK by decreasing the cost of injuries from 116 million SEK to 96 million SEK with an intervention cost of approximately 10 million SEK. The intervention resulted in 13% decreased incidence of healthcare treated injuries. (Lindqvist et al. 2001 [+]).

One neighbourhood renewal intervention centred on the concept of empowerment resulted in a 10% reduction in crime at a total cost of £29m. The reduction in crime was estimated to have a value of £31M, outweighing the costs of investing in the Scheme. However, although the scheme can be highly cost-effective, reduction in anxiety has been included as the only health-related outcome of the programme (Office of the Deputy Prime Minister 2004 [+]).

One intervention to help women quit smoking delivered in collaboration between health and other statutory services and communities resulted in 3,870 life years saved. The incremental cost per life year saved was $509 without applying a discount rate. By applying a discount rate of 3% the results are: life years saved 1,705, and the incremental cost per life year saved is $1,156; with a 5% discount rate, the health gain is 1,026 life years and the incremental cost per life saved is $1,922. (Secker-Walker 1996 [+]).

One intervention to promote hepatitis B vaccinations delivered in collaboration between health and other statutory services and communities was found to be cost-effective. In the control group (media-led intervention), the net savings representing costs of illness averted were $1,336,667 compared with $588,184 for the community mobilisation intervention, the two interventions costing $313,904 and $169,561, respectively. No ratio was reported as both interventions were found cost-saving and cost-effective. (Zhou et al 2003 [+]).

ES1.1 Weak evidence from one moderate quality studies (US) suggests cost-effectiveness of community engagement approaches in general.

The cost per additional life year saved was US$56,000 by a peer/lay delivered mammography promotion intervention, just above the level that is generally considered to be cost-effective at a cost of $2,451 per mammography case. The intervention would be cost-effective at cost of $2,000. (Andersen et al 2002 [+]).

ES1.2 Moderate evidence from one high quality study (US) does not allow for conclusions on the cost-effectiveness of community engagement approaches in general.

One intervention delivered by older volunteers providing help for a public elementary school and in collaboration between health and other statutory services and communities resulted in a cost of $205,000 per QALY gained (0.02 QALY gains in the intervention group) in older adults (deliverer of the intervention). The intervention in this population group was considered not to be cost-effective. However, the programme can be cost-effective or even cost-saving among youngsters (intervention recipient). (Frick et al. 2004 [++]).

No conclusion on the cost-effectiveness of community approaches can be made based on the remaining 11 studies.

Applicability

Only four studies (McIntosh et al. 2009; Office of the Deputy Prime Minister 2004; Richardson et al.

2008) are considered directly applicable as they refer to interventions implemented in the UK. The rest are considered partly applicable because the studies were conducted outside the UK but in a system sufficient similar to the current UK context.

Question 2: What are the resource implications of effective approaches to community engagement?

Evidence statement 2: resource implications of effective approaches to community engagement
ES2.0 No evidence in the 21 studies assessed allows conclusions to be drawn on the resource implications of effective approaches to community engagement. In the evidence review undertaken by O'Mara-Eves et al. (2013) no clear conclusion is drawn by the authors on this issue. The lack of disaggregation of costs in the papers assessed by the EPPI review team made it difficult to distinguish clearly between the costs of the intervention and the costs of the evaluation.

Question 3: Are better outcomes simply the result of increased resources, or are some approaches to community engagement potentially more cost-effective than others?

Evidence statement 3: approaches to community engagement potentially more cost-effective than others
ES3.0 Moderate evidence from eight high and moderate quality studies (see evidence statement 1 for more detail on the studies) suggests that interventions related to all three types of community engagement approaches – peer/lay delivered interventions; collaboration between health and other statutory services and communities, and interventions centred on the concept of empowerment- may be cost effective. In terms of health topic areas, interventions for mammography promotion; improved parent-infant interaction; HIV risk reduction; chronic disease self-management; promotion of hepatitis B vaccinations; smoking cessation; and asthma management may be cost effective. As the available evidence is thinly spread across health topics areas, it is not possible to conclude whether community engagement initiatives to deal with particular health conditions or issues are more cost-effective than others. *Applicability* Only three studies (McIntosh et al. 2009; Office of the Deputy Prime Minister 2004; Richardson et al. 2008) are considered directly applicable as they refer to interventions implemented in the UK. The rest are considered partly applicable because the studies were conducted outside the UK but in a system sufficiently similar to the current UK context.

Although the effectiveness of various interventions seems to have been well established and evidence presented in this précis indicates the cost-effectiveness of a number (eight) of community engagement interventions, overall there is insufficient consistent economic evidence to determine the cost-effectiveness of community engagement approaches at improving health and reducing health inequalities in general. Evidence assessed in this review of 21 studies suggests that all the assessed

specific approaches to community engagement -peer/lay delivered interventions; collaboration between health and other statutory services and communities, and interventions centred on the concept of empowerment-, such as the ones presented in Table 6 below, may be cost-effective. However, it is difficult to make inferences from the studies about the cost-effectiveness of community engagement as a whole or even the cost-effectiveness of certain approaches to community engagement. In terms of health topic areas, interventions for mammography promotion; improved parent-infant interaction; HIV risk reduction; chronic disease self-management; promotion of hepatitis B vaccinations; smoking cessation; and asthma management may be cost effective. As the available evidence is thinly spread across health topics areas, it is not possible to conclude whether community engagement initiatives to deal with certain health conditions or issues are more cost-effective than others. More research needs to be carried out on the topic.

Table 6: Evidence of the cost-effectiveness of specific community engagement interventions and initiatives from 21 studies

Community engagement approaches					
Peer/lay delivered interventions		Collaboration between health and other statutory services and communities		Interventions centred on the concept of empowerment	
Limited evidence of cost-effectiveness[22]	Not enough evidence of cost-effectiveness[23]	Limited evidence of cost-effectiveness	Not enough evidence of cost-effectiveness	Limited evidence of cost-effectiveness	Not enough evidence of cost-effectiveness
Mammography promotion - Andersen et al. 2002 (+) Improved parent-infant interaction - McIntosh et al. 2009 (++) HIV risk reduction -	Impact of volunteers on health outcomes of young mothers - Barnet et al. 2002 (+) Peer led HIV prevention at schools -Borgia et al. 2005 (-)	Injury prevention - Lindqvist et al. 2001 (+) Intervention to help women quit smoking - Secker-Walker, 1996 (+) Promotion of	Diabetes education with cultural component - Brown et al. 2002 (+) Compressed diabetes educational sessions - Brown et al.	Decrease to exposure to indoor asthma triggers (high intensity group) - Krieger et al. 2005 (+) Neighbourhood Wardens Scheme - Office of the Deputy	Health promotion - Kumpusalo et al. 1996 (+)

[22] Includes cost-effectiveness analyses, cost-benefit analyses and cost-utility analyses. Studies included in the EPPI review present limited evidence of cost-effectiveness because even if authors have concluded that the intervention is cost-effective, limitations in their research does not allow to draw a conclusion on the overall cost-effectiveness of these types of interventions.

[23] Includes cost-effectiveness analyses, cost-benefit analyses and cost-utility analyses. Studies included in the EPPI review do not present enough evidence of cost-effectiveness and we cannot draw a conclusion on the overall cost-effectiveness of these types of interventions.

Pinkerton et al. 1998 (++) Chronic disease self-management programme - Richardson et al. 2008 (++)	Smoking prevention in adolescence - Campbell et al. 2008 (+) Abnormal cervical screen follow-up - Ell et al. 2002 (+) Breastfeeding promotion - Long et al. 1995 (+) Mammography promotion - Paskett et al. 2006 (+) Increased duration of breastfeeding - Pugh et al. 2002 (+)	hepatitis B vaccinations - Zhou et al. 2003 (+)	2005 (+) Older volunteers providing help for public elementary school - Frick et al.2004 (++) Promotion of health and physical activity -Reijneveld et al. 2003 (+)	Prime Minister 2004 (+)	

The analysis we have undertaken differs from the analyses performed by O'Mara et al (2013) but, as stated above, we agree with their concluding remark that there is weak but inconsistent evidence that different types of community engagement can be cost-effective and that no firm conclusion can be made about the economic case for community engagement approaches. O'Mara et al also assert that in most instances the studies suggest that there is an economic case for action, however they do not specify in the review which particular studies support this conclusion. Finally as O'Mara-Eves et al. point out and the above table (Table 6) shows, the available evidence included in the review is thinly spread across health topics areas. This makes it difficult to conclude whether community engagement initiatives to deal with certain health conditions or issues are more cost-effective than others.

In terms of the quality assessment, only three studies have minor limitations (Frick et al. 2004, McIntosh et al. 2009, Richardson et al. 2008) and one study (Borgia et al (2005)) had very serious limitations – the rest have been assessed at having potentially serious limitations. Only four studies (Campbell et al. 2008; McIntosh et al. 2009; Office of the Deputy Prime Minister 2004; Richardson et al. 2008) are considered directly applicable as they refer to interventions implemented in the UK. The rest are considered partly applicable because the studies were conducted outside the UK but in a system sufficiently similar to the current UK context. One study (Fried et al. 2004) was excluded as it was

regarded as not applicable and with very serious limitations, but the same programme is evaluated by Frick et al. 2004.

6. References

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7. Appendices

7.1. Appendix A. Evidence tables for the 22 studies[24]

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Andersen et al. **Year:** 2002 **Bibliographic reference:** Andersen, M. R., Hager, M., Su, C., & Urban, N. (2002). Analysis of the cost-effectiveness of mammography promotion by volunteers in rural communities. Health Education & Behavior: The Official Publication	**Source population:** US rural population, females aged 50-80 **Country:** USA **Setting:** 40 rural communities **Data sources:** Primary research	**Interventions:** • What delivered: Mammography promotion via Individual Counselling (IC), Community Activities (CA) or both IC and CA (ICCA) • By whom: Volunteers • To whom: Women aged 50-80 • How delivered: CA - videos describing the benefits of mammography, mammography theme bingo games, display information at community gatherings, events and meetings, community newsletters. IC – using barrier-specific telephone counseling (BSTC) to promote	**Outcomes:** Mammography rates and life years saved Outcome evaluation: Follow-up interviews after 3 years of intervention Method of analysis: NR Time horizon: 3 years Discount rates: • Benefits: NR • Costs: NR	**Primary results:** • Benefits: See below • Costs: (1995 USD) CA $48.82 per woman and $1.953 per each mammography IC $31.74, ICCA $49.02. The estimated cost-effectiveness of the IC intervention ranged from infinite to $437 per additional mammogram. The ICCAs was the most expensive approach, estimated at $2,451	**Limitations identified by author:** Inability to estimate the accuracy of self-report data for the amount of time spent by staff, volunteers, and community members on study activities; data collected by volunteers on the number of women they contacted and how ling their contacts with these women were. Because women participated in

[24] The data extraction/evidence table has been developed as per Appendix K3 "Example of evidence table for economic evaluation studies" of the *Methods for the development of NICE public health guidance* (2012).

of the Society for Public Health Education, 29(6), 755–770 **Type of economic analysis:** Cost-effectiveness analysis **Overall quality assessment:** Potentially serious limitations **Study design:** Randomized study **Aim of the study/research question:** To analyse the cost-effectiveness of mammography promotion by volunteers in rural communities using three different approaches: individual counselling, community activities and combined intervention including both		mammography use. BSTC is individualized, physiological counseling • When/where: Rural communities • How often: NR • How long for: 1 year **Comparator:** No intervention **Sample sizes:** • Total N= NA • Intervention N= Hypothetical 1000 women in each community (352 evaluated) • Control N= Hypothetical 1000 women in each community **Type of community engagement intervention:** Peer/lay delivered interventions by volunteers	Economic perspective: Societal cost Measures of uncertainty: NR Modelling method and assumptions: Micro-simulation method	per additional regular mammography user. The cost-effectiveness of the ICCAs intervention ranged from infinite to $608 per additional mammogram. Although the CAs intervention was effective in reducing relapse by regular users and estimated to be the most cost-effective intervention when analyses included all eligible women living in the CMT communities, it does not appear to be the most effective intervention for promoting mammography use among underusers. In fact, none of the interventions were associated with a statistically significant increase in	the follow-up survey after all promotional activities were completed, and they may have received and read their mailings more than 1 year prior to being asked to estimate the time spent, inaccuracies in their recall are likely. Overestimates of time costs by staff may have inflated cost estimates reported. Overestimation or over reporting by community participants of time costs may have inflated the estimate of societal costs but would not have affected the sponsor's costs. Another limitation is that self-reports were used for collection of data on women's mammography use

Applicability: Partly applicable				mammography use among underusers. The IC intervention was associated with the largest estimated increase in use by underusers of 2.8% over control. As shown in Table 4, among underusers in the IC arm, this translated to an estimated cost of $2,267 per additional new user. The ICCAs arm cost $3,771 per additional new user, and the CAs arm cost $4,650 per additional new user • ICER (for CUA, CEA): The cost per additional life year saved $56,000 • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NA • Other measures to be	**Limitations identified by review team:** No life years saved were reported or other benefits **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** National Cancer Institute and Department of Defense **Other:** NA

				confirmed with NICE for each topic: Effectiveness per additional mammography user (overall) CA – 2.5%, IC – 1.6%, ICCA – 2.0%. Effectiveness per additional mammography user (underusers only) CA – 2.1% IC 2.8%, ICCA 2.6% **Secondary analysis:** Sensitivity analysis: NR **Attrition details:** NR **Main results/conclusion:** The Community Activities intervention was found to be the most cost-effective, at approximately $2,000 for each additional regular mammography user in the community. The cost per year of life saved associated with Mammography promotion was approximately $56,000 per year of life	

				saved. Exploratory analyses suggest that the most cost-effective method of promoting mammography use may vary with the target population	

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Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Barnet et al. **Year:** 2002 **Bibliographic reference:** Barnet, B., Duggan, A. K., Devoe, M., & Burrell, L. (2002). The effect of volunteer home visitation for adolescent mothers on parenting and mental health outcomes: a randomized trial. Archives of Pediatrics & Adolescent Medicine, 156(12), 1216–1222 **Type of economic analysis:** Cost-consequence analysis	**Source population:** Adolescents aged 12 to 18 years at 28 or more weeks' gestation or who had delivered a baby in the past 6 months **Country:** Baltimore, USA **Setting:** Urban, African American community **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: Parents Aides Nurturing and Developing with Adolescents curriculum. The curriculum was based on theories of human ecology, attachment, and social support, which emphasize that positive child development is promoted by nurturing, empathetic parenting and is influenced by the characteristics of families and social networks. A licensed social worker met with the teenager and home visitor during monthly group parenting classes. In addition, the social worker provided individual and family counselling, case management, and coordinated linkages with community	**Outcomes:** Parenting stress index, parenting behaviours, mental health score, social support satisfaction, social support need Outcome evaluation: Validated instruments. Checklists for each contact. Social support was measured with Barrera's Arizona Social Support Interview Schedule, which assesses the adolescent's perceived support satisfaction and need. Health measure MHI-5. The adolescent's parenting behaviour was	**Primary results:** • Benefits: See below • Costs: $200 per year for the volunteer. Costs per teenager supported between • $3,704 and $5,245 in both • programmes • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NR • Other measures to be confirmed with NICE for each topic: Parenting stress index (β -2.5, SE 3.1), parenting behaviours (β -7.3, Se 2.8),	**Limitations identified by author:** A struggle to engage families, maintain their involvement and ensure that curricular material are delivered with fidelity. The program's low number of visits may be poor documentation. Only 63% of the teenagers were located for the follow up assessment **Limitations identified by review team:** Only costs per year for the volunteer ($200) and average cost per teenager for about 1.5 years of service

Overall quality assessment: Potentially serious limitations **Study design:** Randomized trial with assignment to home visitation or control group **Aim of the study/research question:** To evaluate the effect of a volunteer model home visitation program on adolescent parenting outcomes **Applicability:** Partly applicable		agencies when problems were identified. Frequency of social work contact varied by individual need • By whom: Community female volunteer older than 21 years • To whom: Participants attending an alternative school or childbearing adolescents (aged 12-18). They were in their third trimester of pregnancy or had delivered a baby in the previous 6 months • How delivered: Home visitations • When/where: At homes • How often: Weekly • How long for: 1.5hrs. The intervention was designed to last until the child's first birthday, with an option to continue until the child's second birthday **Comparator:** In both groups teenagers received the usual services provided by the school. These included academics, parenting classes, day care, and health care **Sample sizes:**	measured by Bavolek's Adult-Adolescent Parenting Inventory (AAPI) Method of analysis: Authors used an intention-to-treat analysis to measure the effectiveness of the intervention. A t test was used to assess group differences in interval-level baseline variables. Multivariate analyses were used to assess group differences in outcomes, controlling for baseline measures. Also used hierarchical linear regression. All analyses were conducted using SPSS statistical software for PC Time horizon: Structured interviews were conducted at baseline and at 15 months'	mental health score (β -1.0, SE 3.3), social support satisfaction (β -1.3, SE 1.5), social support need (β 3.2, SE 2.1) **Secondary analysis:** NR **Attrition details:** Completion of baseline interview (94%), follow up interview (63%), completion of both (57%) **Main results/conclusion:** The volunteer home visitation program significantly improved some parenting outcomes but not parental distress or poor mental health. Volunteers may be an effective means of providing parents education, but interventions that include specific means of addressing poor mental	($3,704-$5,245) have been reported. No economic analysis performed **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** The Office of Adolescent Pregnancy Programs, US Department of Health and Human Services. Dr. Barnet was a Robert Wood Johnson Generalist Physician Faculty Scholar during the study period **Other:** NA

		• Total N= 232 • Intervention N= 118 • Control N= 114 **Type of community engagement intervention:** Peer/lay delivered interventions	follow-up by research staff blinded to group assignment <u>Discount rates:</u> • Benefits: NR • Costs: NR <u>Economic perspective:</u> Social services[25] <u>Measures of uncertainty:</u> NR <u>Modelling method and assumptions:</u> NA	health are likely to have greater effects	

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Evidence table/Data extraction template for economic studies

[25] EPPI study

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Borgia et al. **Year:** 2005 **Bibliographic reference:** Borgia, P., Marinacci, C., Schifano, P., & Perucci, C. A. (2005). Is peer education the best approach for HIV prevention in schools? Findings from a randomized controlled trial. The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 36(6), 508–516. doi:10.1016/j.jadohealth.2004.03.005 **Type of economic analysis:** Cost-consequences analysis **Overall quality assessment:** Very serious limitations **Study design:** Randomized Controlled Trial (RCT) **Aim of the study/research question:** Effectiveness of peer education when	**Source population:** Students attending the final 2 years in 18 public high-schools in Rome. All socio-economic levels (classified as low and medium-high), all types of school (humanistic/scientific, technical or vocational). Median age: 18 years, both male and female **Country:** Italy **Setting:** Urban, public sector high-schools (18 schools) **Data sources:** Primary research (RCT)	**Interventions:** • What delivered: Peer-led educational HIV prevention programme • By whom: Students/teachers • To whom: Students • How delivered: peer/teacher • When/where: school • How often: 10 hours over 5 sessions (peer-led intervention) and 8 hours over 3 months (teacher-led intervention) • How long for: 3 months **Comparator:** Teacher-led HIV prevention programme **Sample sizes:** • Total N= 1295 • Intervention N= 613 (47.3%) • Control N= 682 (52.7%)	**Outcomes:** 1. Sexual behaviour 2. Knowledge of HIV 3. Skills in prevention 4. Risk perception 5. Attitudes towards persons with AIDS Outcome evaluation: Outcome of the interventions was measured with an individual self-administrated questionnaire (validated with a pilot study). The questionnaire was distributed before the intervention (pre-test) and afterwards (post-test), at a 5 months lag Method analysis: A multivariate	**Primary results:** • Benefits: See below • Costs: (€2004) • I: €21.500 (€28.2 per target student involved in peer-led group) • C: € 10,800 (€11.6 per target student in the teacher-led group) • ICER: NA • B:C ratio: NA • Other measures: 6.7% scores greater improvement in knowledge of HIV **Secondary analysis:** Sensitivity analyses: NR **Attrition details:** 20% for the peer-led group 27% for the teacher-led group	**Limitations identified by author:** 1. The sample size was not large enough to reach the desired statistical power, mostly because of a higher-than-expected attrition rate, which, moreover, differed between the two trial arms (i.e., higher in the teacher-led arm) 2. The peer led Education curriculum evaluated in our trial was not as complex as those shown to be effective in other contexts and the work-groups that evaluated the program judged it to be more suitable for younger populations 3. There remain doubts as to the

compared to teacher-led curricula in AIDS prevention programmes **Applicability:** Partly applicable as it is not conducted in the UK; the effectiveness of the intervention was not clear; costs are not presented in sufficient detail		**Type of community engagement intervention:** Peer/lay delivered interventions: 54 selected leaders among students (27 teachers)	analysis; a linear regression model; Wilcoxon test Time horizon*:* 5 months post-intervention Discount rates: N/A • Benefits • Costs Economic Perspective: N/A Measures of uncertainty: N/A Modelling method and assumptions: N/A	**Main result/conclusion:** The peer-led intervention seems to have had no marked benefits with respect to the teacher-led intervention. Although the peer-led intervention was apparently more effective in improving knowledge, it was significantly more costly, and before recommending its use, cost-effective analyses should be conducted	methods for selecting peer leaders: these doubts arose during the qualitative evaluation of the process and we are not able to exclude that few leaders were chosen by teachers according to their academic skills and not to their ability in communicating and establishing relationships with the other student. **Limitations identified by review team:** Only cost of intervention and comparator have been reported, no economic analysis performed **Evidence gaps and/or recommendations for future research:** See above limitations

					Source of funding: European Commission **Other:** NA

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Evidence table/Data extraction template for economic studies

Study	Population and setting	Intervention /	Outcomes and	Results	Notes

details		comparator	methods of analysis		
Authors: Brown et al. **Year:** 2002 **Bibliographic reference:** Brown, S. A., Garcia, A. A., Kouzekanani, K., & Hanis, C. L. (2002). Culturally competent diabetes self-management education for Mexican Americans: the Starr County border health initiative. Diabetes Care, 25(2), 259–268 **Type of economic analysis:** Cost consequence analysis **Overall quality assessment (CCA checklist):** Potentially serious limitations	**Source population:** Individuals (men and women) with type 2 diabetes between 35-70 years of age (diagnosed after age 35) accompanied by a family member of friend **Country:** Texas-Mexico border; Starr County **Setting:** Community-based schools, churches, adult day care centers, agricultural extension centers, and community health clinics sites through Starr County **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: Instructional sessions and support group sessions • By whom: Bilingual Mexican American nurses, dieticians, and community workers from Starr County • To whom: Mexican Americans with type 2 diabetes • How delivered: 3 months of weekly 2-h instructional sessions on nutrition, self-monitoring of blood glucose, exercise, and other self-care topics and 6 months of biweekly plus 3 months of monthly 2-h support group sessions to promote behaviour changes through problem-solving and food preparation demonstrations. • When/where: Community-based schools, churches, adult day care centres, agricultural extension centres, and community health clinics sites through the county	**Outcomes:** Indicators of metabolic control, diabetes knowledge, body mass index (BMI) and diabetes related health beliefs Outcome evaluation: Physiological indicators (HbA1c, FBG, cholesterol, triglycerides, BMI) and Psycho-educational indicators—Health beliefs (control, barriers, social support, impact of job, benefits) Method of analysis: A series of univariate analyses of covariance was performed Time horizon: Intervention lasts 1 year with 3 year follow-up Discount rates: • Benefits: NR	**Primary results:** • Benefits: See below • Costs: $384 per person – intervention group (based on the scenario that a nurse, a dietician, and a community worker all attended sessions 1–12; a nurse or a dietician and a community worker attended sessions 13–26. Authors assume educational materials would be a one-time purchase at the outset of the project, free community-based sites are available, costs for monitoring supplies are covered by third party reimbursement. overhead charges that would be added to patient costs by organizations that	**Limitations identified by author:** NA **Limitations identified by review team:** No economic analysis performed **Evidence gaps and/or recommendations for future research:** Future research should be aimed at developing culturally appropriate outcome measures, addressing translation issues for non–English speaking populations, and exploring motivating factors and strategies for diabetes self-management. **Source of funding:** This study was funded by the National Institute for Diabetes and Digestive and

Study design: Prospective, randomized, repeated-measures design; Longitudinal observations were nested within experimental or 1 year wait listed control groups who received usual care provided by their private physicians or local clinic (follow-up to 3 years) **Aim of the study/research question:** To determine the effects of a culturally competent diabetes self-management intervention in Mexican Americans with type 2 diabetes **Applicability:** Partly applicable as it is not conducted in the UK; costs are not		• How often: 52 contact hours over 12 months: 3 months of weekly 2hrs instructional sessions on nutrition, self-monitoring of blood glucose, exercise and other self-care topics and 6 months of biweekly support group sessions and monthly 2hrs support to promote behaviour changes **Comparator:** 1 year wait-listed control group who received usual care provided by their private physicians or local clinic. **Sample sizes:** • Total N= 256 • Intervention N= 128 to the experimental group • Control N= 128 to the 1 year wait list (control) group **Type of community engagement intervention:** Collaboration between health and other statutory services and communities	• Costs: NR Economic perspective: NR Measures of uncertainty: NR Modelling method and assumptions: Hierarchical Linear and Nonlinear Modelling software (HLM 5; Scientific Software International, Lincolnwood, IL) was used to perform individual growth curve analysis, using multilevel modelling. The multilevel modelling consists of two stages: a within-subject analysis to estimate the parameters of the individual growth curve and a between subject analysis to predict differences in the growth parameters	might offer such an intervention are not included • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NR • Other measures: *HbA1c:* Experimental: decreased by 1.2%; Control: 0.58 *FBG:* Experimental: levels decreased by 23.4mg/dl Control: decreased by 6.1mg/dl *Diabetes knowledge:* Experimental: increased by 5.2 items correct Control: 1.8 items correct (Benefits beyond 3 months are not presented here; for 6 months and 12 months see Table 3,	Kidney Diseases and the Office of Research on Minority Health, National Institutes of Health, and the State of Texas **Other:** NA

presented in sufficient detail				pg. 263) **Secondary analysis:** Sensitivity analyses: NR **Attrition details:** 90% **Main results/conclusion:** The Starr County diabetes self-management education study demonstrated that, comparing experimental to wait-listed control groups, statistically significant changes were achieved in three health outcomes: diabetes knowledge, FBG, and HbA1c. The series of univariate analyses of covariance indicated that the experimental group showed statistically significant lower measures of HbA1c and FBG at 6 and 12 months and higher diabetes knowledge scores at 3 and 12 months than the control group.	

				Diabetes knowledge was not measured at 6 months	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of	Results	Notes

			analysis		
Authors: Brown et al. **Year:** 2005 **Bibliographic reference:** Brown, S. A., Blozis, S. A., Kouzekanani, K., Garcia, A. A., Winchell, M., & Hanis, C. L. (2005). Dosage effects of diabetes self-management education for Mexican Americans: the Starr County Border Health Initiative. Diabetes Care, 28(3), 527–532 **Type of economic analysis:** Cost consequence analysis **Overall quality assessment:** Potentially serious limitations	**Source population:** Individuals (men and women) between 35 and 70 years of age diagnosed with type 2 diabetes≥1 year **Country:** Texas-Mexico border; Starr County **Setting:** Community-based schools, churches, adult day care centers, agricultural extension centers, and community health clinics sites through Starr County **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: compressed (16hrs education, 6hrs of support group) instructional sessions • By whom: Bilingual Mexican American nurses, dieticians, and community workers from Starr County • To whom: Men and women aged 35-70 with type 2 diabetes • How delivered: eight weekly 2-h educational sessions followed by support sessions strategically held at 3, 6, and 12 months. Both interventions covered similar information, but the time spent on some topics differed • When/where: Community-based schools, churches, adult day care centres, agricultural extension centres, and community health clinics sites through the county • How often: 8 weekly 2hrs education sessions followed by support sessions strategically held at 3, 6, and 12 months. Both	**Outcomes:** HbA1c; FBG; Diabetes knowledge Outcome evaluation: same as 2002 study Method of analysis: prospective, quasi-experimental, repeated-measures, nested design Time horizon: Both interventions last 1 year Discount rates: • Benefits: NR • Costs: NR Economic perspective: Health system Measures of uncertainty: To handle missing in the longitudinal analyses, authors applied hierarchical linear models (HLMS) by which	**Primary results:** • Benefits: See below • Costs: Costs of the two interventions were estimated based on the following assumptions: 1) monitors and strips are covered by insurance, 2) educational materials are a one-time purchase at the outset of the project, and 3) free community-based sites are available. *Extended care:* 12 educational sessions at $120/session = $1,440 14 support group sessions at $70/session=$980 Food: $25/session for 26 sessions= $650 Total: $3,070/8 diabetic subjects per group=$384/person *Compressed care:* 8	**Limitations identified by author: S**elf-management interventions are more effective for participants with very elevated glucose levels, such as in study. This factor limits the generalizability of our interventions. Authors demonstrate effectiveness of culturally competent diabetes self-management education; but study participants, on average, did not achieve the national HbA1c target. Data from the study indicate a decrease in both interventions, but the best result (HbA1c 9.2%) occurred in the extended intervention for

Study design: Prospective, quasi-experimental, repeated-measures, nested design **Aim of the study/research question:** The objective of this study was to compare two diabetes self-management interventions designed for Mexican Americans: "extended" (24 h of education, 28 h of support groups) and "compressed" (16 h of education, 6 h of support groups). Both interventions were culturally competent regarding language, diet, social emphasis, family participation, and incorporating cultural beliefs **Applicability:** Partly applicable as it is not conducted in the UK		interventions covered the same topics, but the time spent on some topics differed. All participants received their usual diabetes care, if any, provided by local physicians or clinics, which for some individuals was obtained in Mexico • How long for: Compressed -22 hrs over 12 months • Extended: 52 hrs over 12 months **Comparator:** Extended (24hrs education, 28hrs of support groups) instructional sessions **Sample sizes:** • Total N= 216 • Intervention N= 114 (compressed group) • Control N= 102 (extended group) **Type of community engagement intervention:** Collaboration between health and other statutory services and communities	non-randomly missing data were handled by including indicators of missing data patters Modelling method and assumptions: NR	educational group sessions at $70/session = $560. 3 support group sessions at $70/session =$210. Food: $25/session for 11 sessions = $275 Total: $1,045/8 diabetic subjects per group = $131/person • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NR • Other measures to be confirmed with NICE for each topic: HbA1c level – no difference at 3 months FBG level – no difference at 3 months Diabetes knowledge – no difference at 3 months. Numbers for 12 months are not presented here **Secondary analysis:**	individuals who received the maximum "dose," that is, those who attended 50% of the intervention sessions **Limitations identified by review team:** No economic analysis performed **Evidence gaps and/or recommendations for future research:** Interventions designed to maintain long-term benefits of self-management programs must be tested in future research to determine the most cost-effective reinoculation strategies **Source of funding:** National Institute of Diabetes and Digestive and Kidney

				Sensitivity analyses: NR **Attrition details:** 82% **Main results/conclusion:** The interventions were not statistically different in reducing HbA1c; however, both were effective. A "dosage effect" of attendance was detected with the largest HbA1c reductions achieved by those who attended more of the extended intervention. For individuals who attended ≥50% of the intervention, baseline to 12-month HbA1c change was -0.6 percentage points for the compressed group and -1.7 percentage points for the extended group	Disease/National Institutes of Health **Other:** NA

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of	Results	Notes

			analysis		
Authors: Campbell et al. **Year:** 2008 **Bibliographic reference:** Campbell, R., Starkey, F., Holliday, J., Audrey, S., Bloor, M., Parry-Langdon, N., Moore, L. (2008). An informal school-based peer-led intervention for smoking prevention in adolescence (ASSIST): a cluster randomised trial. *Lancet*, *371*(9624), 1595–1602. doi:10.1016/S0140-6736(08)60692-3 **Type of economic analysis:** Cost-consequence analysis **Overall quality assessment:** Potentially serious limitations	**Source population:** Students aged 12-13 in 59 schools of West of England and Southeast Wales **Country:** UK **Setting:** Educational: secondary schools **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: 10-week intervention period during which peer supporters undertook informal conversations about smoking with their peers when travelling to and from school, in breaks, at lunchtime, and after school in their free time, and logged a record of these conversations in a simple pro-forma diary • By whom: Peer supporters (influential students) • To whom: Students aged 12-13 • How delivered: Conservations outside the classroom • When/where: In secondary schools • How often: NR • How long for: 10 weeks **Comparator:** 59 schools were selected to continue with their usual smoking education and policies for tobacco control, and to be randomised to either the	**Outcomes:** Prevalence of smoking in the past week in the year group of the school with 2 years follow-up Outcome evaluation: A questionnaire was completed in the classroom, with students required not to confer. Saliva sample was also collected to keep reporting bias to minimum Method of analysis: Samples were analysed with the ELISA technique. At 1 year follow up 12 intervention and 12 control schools were selected Time horizon: 10 weeks of intervention with 2 years follow up	**Primary results:** • Benefits: See below • Costs: Intervention: £27 (95% CI 19–48) per student and £4,700 (2,408–6,786) per school. The average cost excluding travel was £23 (16–43) per student and £3,937 (2,221–5,511) per school • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NR • Other measures to be confirmed with NICE for each topic: The odds ratio of being a smoker in intervention compared with control school was 0.75 immediately	**Limitations identified by author:** NR **Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** This study was not intended to be a cost-consequence analysis. The authors present the effectiveness of the programme briefly mentioning costs **Source of funding:** MRC **Other:** NA

Study design: A cluster randomised trial **Aim of the study/research question:** To assess the effectiveness of a peer-led intervention that aimed to prevent smoking uptake in secondary schools **Applicability:** Directly applicable		control group or the trial, or the intervention group in which schools would additionally receive the ASSIST (A Stop Smoking In Schools Trial programme) intervention **Sample sizes:** • Total N= 10730 (59 schools) • Intervention N= 5358 (30 schools) • Control N= 5372 (29 schools) **Type of community engagement intervention:** Peer/lay delivered interventions	Discount rates: • Benefits: NR • Costs: NR Economic perspective: NR Measures of uncertainty: NR Modelling method and assumptions: Stratified-block randomisation with strata defined by the same criteria as for the random selection procedure. Authors assumed that 30% of students would be in the group at high risk of smoking uptake	after the intervention, 0.77 at 1 year follow up and 0.85 at 2 years follow up. The corresponding odds ratios for the high risk group were 0.79, 0.75 and 0.85 respectively **Secondary analysis:** Sensitivity analyses: NR **Attrition details:** 90% of response rate from students **Main results/conclusion:** The odds ratio of being a smoker in intervention compared with control schools was 0·75 (95% CI 0·55–1·01) immediately after the intervention (n=9349 students), 0·77 (0·59–0·99) at 1-year follow-up (n=9147), and 0·85 (0·72–1·01) at 2-year follow-up (n=8756). The corresponding odds ratios for the high-risk group	

				were 0·79 (0·55–1·13 [n=3561]), 0·75 (0·56–0·99 [n=3483]), and 0·85 (0·70–1·02 [n=3294]), respectively. In a three-tier multilevel model with data from all three follow-ups, the odds of being a smoker in intervention compared with control schools was 0·78 (0·64–0·96). The results suggest that, if implemented on a population basis, the ASSIST intervention could lead to a reduction in adolescent smoking prevalence of public-health importance	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of	Results	Notes

			analysis		
Authors: Ell et al. **Year:** 2002 **Bibliographic reference:** Ell, K., Vourlekis, B., Muderspach, L., Nissly, J., Padgett, D., Pineda, D., Lee, P.-J. (2002). Abnormal cervical screen follow-up among low-income Latinas: Project SAFe. Journal of Women's Health & Gender-Based Medicine, 11(7), 639–651. doi:10.1089/152460902760360586 **Type of economic analysis:** Cost-consequence analysis **Overall quality assessment:** Potentially serious limitations **Study design:** Randomized, quasi-experimental **Aim of the study/research question:** This report describes a pilot study of the Screening Adherence Follow-Up Program	**Source population:** Women, majority Hispanic **Country:** LA, USA **Setting:** Urban **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: Appointment reminder, follow up calls and educational messages. Per SAFe protocol, all women receive level I services: a baseline 30-minute telephone call including scripted interactive risk assessment of potential knowledge, attitudinal, psychosocial, and practical barriers, and immediate responsive health education and counselling; appointment reminder and follow-up calls; and 6-month and 1-year calls that provide a reinforcing educational message about the value of follow-up and subsequent rescreening. Guided by a clinical decision making algorithm, women who meet predetermined	**Outcomes:** Adherence rates to recommended follow-up to Pap tests for cervical cancer Outcome evaluation: Survey Method of analysis: NR Time horizon: 1 year Discount rates: • Benefits: NR • Costs: NR Economic perspective: NR Measures of uncertainty: NR Modelling method and assumptions: NR	**Primary results:** • Benefits: See below • Costs: Average $319 per enrolee for 1 year • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NR • Other measures to be confirmed with NICE for each topic: Adherence levels: 41% of women with LGSIL were fully adherent, with 42% partially adherent; 61% of women with HGSIL were fully adherent, with 32% partially adherent **Secondary analysis:**	**Limitations identified by author:** A nonrandomized design was used, and a significant number of women could not be located to be enrolled into SAFe. The adherence rate for the women who were not enrolled (those who refused or could not be located) was considerably below that for the enrolled women. Because of the quasi-experimental study design, however, authors cannot conclude with confidence that SAFe was responsible for this difference. It could be argued that the program was managing to enrol those women who

(SAFe), an individualized, structured case management program designed to assess for and intervene in response to a variety of potential personal and systems barriers to follow-up adherence. Interventions included health education, counseling, and systems navigation **Applicability:** Partly applicable		psychosocial problem risk criteria at baseline are assigned to service level II or service level III or both. Service level II (women with mild psychological distress, represented by Brief Symptom Inventory depression or anxiety subscale [BSI-D or BSI-A] scores of 7–13, poor understanding of reason for follow-up, significant comorbid physical illness, and systems navigation or community referral needs) provides PC assistance with environmental barriers and systems navigation, including patient-medical provider communication and resource referral, through diagnostic resolution and initiation of treatment. Level III women (women with cancer, moderate or severe symptoms of anxiety or depression, or significant psychosocial stress) are		NR **Attrition details:** NR **Main results/conclusion:** Over 1 year post enrolment, 41% of women with LGSIL were fully adherent, with 42% partially adherent; 61% of women with HGSIL were fully adherent, with 32% partially adherent. In a comparison group of 369 non enrolees (women who refused participation or could not be located for consent), adherence rates were 58% for LGSIL and 67% for HGSIL. A survey among a random sample of women served indicated that 93% were “mostly” or “very” satisfied, overall, with SAFe services. The intervention team—a peer counsellor and a master’s degreed social	were going to be adherent anyway and that it is the women who SAFe could not reach who most need the intervention **Limitations identified by review team:** No attempt to quantify the cost per increase in adherence rate; no any other results of adherence **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** NR **Other:** NA

		referred to the M.S.W. for further assessment, brief counselling, and referral to psychosocial oncology and mental health services. Baseline and follow up services are aimed at empowering women to act in their own best interest and at enhancing women's self-management skills • By whom: Team consisting of a peer counsellor (PC) with a B.A. or relevant experience in community-based healthcare programs and master's degreed social worker (M.S.W) • To whom: Women who had either a low-grade or high-grade squamous intraepithelial lesion (LGSIL or HGSIL) abnormal Pap result • How delivered: By telephone, with in-person contacts as needed • When/where: From a large diagnostic, and treatment centre serving low-income women		worker addressed multiple psychosocial and systems navigation problems to reduce potential barriers to adherence, including knowledge, attitudinal, psychosocial, psychological distress, systems communication, and resource access problems. SAFe appears highly acceptable to women and may significantly enhance medical care management following an abnormal cervical screen for a carefully targeted group of women at risk for suboptimal follow up adherence	

		• How often: NR • How long for: 30 minutes **Comparator:** Usual follow up services **Sample sizes:** • Total N= 565 • Intervention N= 196 • Control N= 369 **Type of community engagement intervention:** Peer/lay delivered interventions			

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of	Results	Notes

			analysis		
Authors: Frick et al. **Year:** 2004 **Bibliographic reference:** Frick, K. D., Carlson, M. C., Glass, T. A., McGill, S., Rebok, G. W., Simpson, C., & Fried, L. P. (2004). Modeled cost-effectiveness of the Experience Corps Baltimore based on a pilot randomized trial. Journal of Urban Health: Bulletin of the New York Academy of Medicine, 81(1), 106–117. doi:10.1093/jurban/jth097 **Type of economic analysis:** Cost-utility analysis **Overall quality assessment:** Minor limitations	**Source population:** Older adults (volunteers) and students **Country:** Baltimore, USA **Setting:** Urban (schools) **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: Experience Corps Baltimore • By whom: Older adults • To whom: School students • How delivered: The volunteers in the three schools had roles • interacting with kindergarten through third-grade students, including in-class and • out-of-class literacy support, behaviour management, violence prevention, community outreach, and library support • When/where: 3 schools • How often: Per week • How long for: 15 hours **Comparator:** 3 schools without volunteers **Sample sizes:** • Total N= Simulation of 500 in each group • Intervention N= 500 • Control N= 500 **Type of community engagement**	**Outcomes:** QALYs gained by older adult volunteers, further medical expenditure saving and lifetime earnings increased for children (graduation rates) Outcome evaluation: See Modelling method Method of analysis: See below Time horizon: 2 years (assuming benefits of volunteer involvement ended after 1 year) Discount rates: • Benefits: NR • Costs: 3% Economic perspective: Medicare and Medicaid Measures of	**Primary results:** • Benefits: QALYs - two years: mean- 8.15. median - 8.25 • Costs: ($2003) The personnel costs for a 20-school program were $287,000. Other operating, training, and recruiting costs totaled $132,000. The cost of volunteer support, $1.27 million of the $1.8 million total. The cost per volunteer was $3,613 - of $7 per hour of volunteer time • ICER (for CUA, CEA): Authors described the relationship between extra children graduating from high school and experiencing expected increased lifetime earnings and the cost and cost-	**Limitations identified by author:** Authors assumed the benefits of volunteer involvement ended after 1 year, and that long-term participation would not enhance short-term benefits. Although authors could not compare non volunteering controls with volunteers after 1 year, observational data suggest continued protection from functional decline. Authors assumed no indirect cost savings from older adults in better health not requiring informal care. Authors calculated benefits to the children based on increased earnings potential and not

Study design: Randomization **Aim of the study/research question:** (1) to model the cost-effectiveness of the Experience Corps Baltimore using data from a pilot randomized trial, including costs, older adults' health status, and quality of life and cost data from the Medical Expenditure Panel Survey, and (2) to describe the relationship between children experiencing increased expected lifetime earnings through improved educational attainment resulting from exposure to the Experience Corps Baltimore volunteers and the program's costs and cost-effectiveness **Applicability:** Partly applicable		**intervention:** Peer/lay delivered interventions	uncertainty: NR Modelling method and assumptions: Authors simulated 500 older adults, representing a critical mass of 25 volunteers at each of 20 schools, as exposed to the Experience Corps Baltimore volunteer program in comparison with 500 older adults who were identical at baseline, but not exposed to the program. The critical mass of 25 was experience based. Author simulated self-reported health status transitions for 2 years after baseline using a Markov model with random transitions. Authors assumed that different transition probabilities would apply only for the first year (i.e., the length of follow-up in the pilot	effectiveness of Experience Corps Baltimore, noting the number to make the ICER less than $50,000/QALY and the number to make the program cost-saving • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic: See above **Secondary analysis:** NR **Attrition details:** NR **Main results/conclusion:** An average medical expenditure savings of nearly $140,000 for 500 volunteers over a 2-year time period, or $273 per	other known health and sociocultural benefits associated with higher education. Authors assigned no monetary value to potentially improved retention and performance for teachers. Authors assigned no monetary value to benefits for principals, who might also benefit. Finally, authors assigned no monetary value to potential long-term community benefits. If the school improves sufficiently, this could be translated into increased property values and other positive outcomes. Future cost-effectiveness methods research for community-based interventions should focus on the valuation

			randomized trial). For transitions between the end of the first and second years, we used the observed control transition probabilities for everyone. The simulation was programmed using Visual Basic and was run 5,000 times to obtain a distribution of cost-effectiveness results. Regression analyses were conducted using survey data commands in Stata 8.0 because of the complex survey design. The EQ-5D scores were analysed using linear regression. Total expenditures were analysed using a two-part model because of the number of individuals with no expenditures (although this is small in a population aged 60 years and older)	volunteer. The average per volunteer QALY improvement relative to being in the control group is 0.02. In 98.7% of the simulations, volunteers had medical care expenditure savings in the first year, and in 95.4% of the simulations, volunteers had expenditures savings over 2 years. For QALY changes, the proportions were 85.8% and 84.9%, respectively. The wide confidence intervals are because of small samples (49 and 61) distributed among 25-cell transition matrixes, leading to the suggestion of improvement with inexact measurement. In no case would the medical expenditure savings over 2 years be sufficient to offset program costs. On average, each quality adjusted life year (QALY)	of benefits for those outside the target population. Several assumptions might bias the results in favour of Experience Corps Baltimore. First, the budgeted costs do not include role development. The investigators and community team members were actively engaged in developing the roles for the older adults that were suggested by principals and that did not overlap with activities performed by paid staff **Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** NA

			and the skewness of the distribution	gained by older adults in Experience Corps Baltimore costs $205,000. The lower bound of the 95% confidence interval for the cost-effectiveness is $65,000/QALY. The upper bound is undefined as 15% of the simulations indicated no QALY improvements. If 0.3% of students exposed to the Experience Corps Baltimore changed from not graduating to graduating, the increased lifetime earnings would make the incremental cost-effectiveness ratio $49,000/QALY. If an additional 0.1% changed to graduating from high school, the program would be cost-saving	**Source of funding:** The Retirement Research Foundation, the Erickson Foundation, the state of Maryland, the state of Maryland Department of Education, the Baltimore City Public Schools, the Baltimore City Commission on Aging and Retirement Education, the Johns Hopkins Prevention Center, and the Corporation for National Service and by a small grant from the Borchard Foundation Center on Law and Aging **Other:** NA

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of	Results	Notes

			analysis		
Authors: Fried et al. **Year:** 2004 **Bibliographic reference:** Fried, P. L., Carlson, C.M., Freedman, M., Frick, D. K., Glass, A. T., Hill, J., McGill, S., Rebok, W. G., Seeman, T., Tielsch, J., Wasik, A.B., Zeger, S. (2004). A Social Model for Health Promotion for an Aging Population: Initial Evidence on the Experience Corps Model. Journal of Urban Health: Bulleting of the New York Academy of Medicine, 81 (1), 64-78 **Type of economic analysis:** Cost-effectiveness analysis **Overall quality assessment:** Very	**Source population:** The 128 volunteers were 60-86 years old; 95% were African American. Mean age: 69; 92% females **Country:** Baltimore, Maryland, USA **Setting:** Public elementary schools **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: Programs to 1. Support literacy development for children in kindergarten through third grade.2. Support library functions under the guidance of a librarian, including helping children pick books they will enjoy and reading to or with children. 3. Teach children how to solve problems and play. 4. Enhance school attendance • By whom: 128 volunteers (70 in the intervention group, 58 in the control group) 60-86 years old; 95% were African American; recruited through community groups and churches in neighbourhoods around the chosen schools, at senior events, at job fairs, on the sidewalk, and by targeted mailings • To whom: Children at schools • How delivered: NR (reported elsewhere) • When/where: 6 public elementary schools. Volunteers	**Outcomes:** Levels of physical, social, and cognitive activity among elderly (volunteers). Outcome evaluation: Self-reported survey Method of analysis: *t* tests or chi square Time horizon: 3 months intervention with 4-8 months follow-up Discount rates: • Benefits: NR • Costs: NR Economic perspective: NA Measures of uncertainty: NR Modelling method and assumptions: NA	**Primary results:** • Benefits: NR • Costs: To recruit older volunteers to the intense time commitment, they were offered a small incentive of $150-200 per month to reimburse expense and serve as token recognition for the volunteers' contributions • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic: *Physical activity:* At follow-up, 44% of Experience Corps participants reported feeling stronger,	**Limitations identified by author:** NR **Limitations identified by review team:** No actual cost of intervention is presented (only cost of incentives). Cost and benefits of this study are presented elsewhere. Effects are not measured in terms of health benefits **Evidence gaps and/or recommendations for future research:** As above **Source of funding:** The Retirement Research Foundation, the Erickson Foundation, the state of Maryland, the state of Maryland Department of

serious limitations **Study design:** A randomized trail **Aim of the study/research question:** To explore whether a program for older volunteers, designed for both generatively and health promotion, leads to short-term improvements in multiple behavioural risk factors and positive effects on intermediary risk factors for disability and other morbidities (Experience Corps program) **Applicability:** Not applicable		entered schools in small groups (Nov.1999, Jan.2000, Mar.2000) • How often: over 3-4 days • How long for: 15hrs per week, over a 3 months period. Follow up: 8, 6 and 4 months depending on entrance (Nov.1999, Jan.2000, Mar.2000) **Comparator:** 58 participants (no other details presented) **Sample sizes:** • Total N= 128 • Intervention N= 70 • Control N= 58 **Type of community engagement intervention:** Peer/lay delivered interventions		compared with 18% of controls ($P< .02$), and there was a 13% increase in those who reported their strength as very good to excellent vs. a 36% decline among controls ($P < .03$). Grip strength decreased less (21%) in the Experience Corps group than in the control group (26% decrease), but the difference was not significant. Walking speed decreased in both groups, but there was a significantly smaller decline in the intervention group (from 0.95 to 0.92 meters/second) than in the control group (from 1.06 to 0.86 meters/second; $P=$ .001), declines of 3% versus 19%,	Education, the Baltimore City Public Schools, the Baltimore City Commission of Aging and Retirement Education, the Johns Hopkins Prevention Center, and the Corporation for National Service **Other:** NA

				respectively. Fall rates decreased more than 50% among the Experience Corps participants (from 15% to 7%), and the rate increased from 10% to 13% among controls; however, the numbers in each group were small, and changes were not significant. Cane use decreased in 50% of users in the intervention group (3/6) and 20% of users in the control group (1/5), a non significant difference. *Social activity:* Volunteers reported a significant increase in the number of people they felt they could turn to for help. *Cognitive activity:* There was no significant difference in the number of books read per	

				months or in the frequency. Volunteers reported 4% decline in the number of hours of TV viewing per day. The control group reported an 18% increase **Secondary analysis:** NR **Attrition details:** from 159 volunteers, 148 agreed to participate. After randomization, 20 dropped out. 80% returned the following year, supporting a perception of generative impact **Main results/conclusion:** The program increased the physical, social, and cognitive activity levels of older adult volunteers Simultaneously, authors observed meaningful improvements in school	

				environment and children's reading scores and behaviour	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Krieger et al.	**Source population:**	**Interventions:**	**Outcomes:**	**Primary results:**	**Limitations identified**

Year: 2005 **Bibliographic reference:** Krieger, W.J., Takaro, K.T., Song, L., Weaver, M. (2005). A Seattle-King County Health Homes Project: A randomized, Controlled Trial of a Community Health Worker Intervention to Decrease Exposure to Indoor Asthma Triggers. Journal of American Public Health, 95 (4), 652-659. doi:10.2105/AJPH.2004.042994 **Type of economic analysis:** Cost-benefit analysis **Overall quality assessment:** Potentially serious limitations **Study design:** A randomized controlled trial **Aim of the study/research question:** Assess the effectiveness of a community health worker intervention	274 low income households containing a child aged 4-12 years who had asthma (Medicaid) **Country:** Seattle-King County, USA **Setting:** Homes **Data sources:** Primary research	*Describe in detail, including:* • What delivered: Environmental assessment, education, support for behaviour change and resources • By whom: Community health worker • To whom: Children with asthma • How delivered: Visits to home, mean visit length 1 hour • When/where: In home • How often: 7 times in 1 year • How long for: Jan.1999-May. 2000 **Comparator:** Participants were assigned to either a high-intensity group receiving 7 visits and a full set of resources or a low-intensity group receiving a single visit and limited resources **Sample sizes:** • Total N= 1116 children with	Asthma symptom days and urgent health services use while improving caregiver quality of life score Outcome evaluation: In home interviews with the participants, dust sample collection, and home inspection after 6 months exit from high-intensity HI) group. No follow up in low-intensity (LI) group Method of analysis: Analysis was based on original allocation, and no participants crossed over between groups. Authors examined baseline differences across groups with the *t*, Wilcoxon rank-sum, or χ^2 tests. We used paired *t*, signed-rank, or McNemar tests to examine within-group baseline-to-exit changes. To examine across group	• Benefits: See below • Costs: ($2001) Caregivers - $110 for participation. Unit cost of 3 services; hospital admissions ($4,309-$8,044), emergency department visits (%116-$496) and clinic visits ($41-$159). The cost of the intervention was also estimated and included salary and fringe benefits, supplies, rent, travel, office expenses, and indirect charges (13%) • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NR • Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic:	**by author:** Was impossible to blind participants to group assignment. Sometimes, participants revealed assignment to exit interviewers which may have biased collection of self-reported measures. Loss of follow-up may have biased results if systematic differences in drop outs had occurred across groups. This study did not include usual care group. Study did not include all possible interventions to contain costs **Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** NA

focused on reducing exposure to indoor asthma triggers **Applicability:** Partly applicable		provider-diagnosed asthma and reached 714 (64%) of their caregivers. Study was completed by 214 (78% of participants). • Intervention N= 110 (80%) • Control N= 104 (76%) **Type of community engagement intervention:** Interventions centred on the concept of empowerment	exit differences adjusted for baseline across-group differences, authors used generalized estimating equation (GEE) models with the robust option (using the Huber/White/Sandwich estimator of variance) and the equal within group working correlation structure Time horizon: 1 year follow-up Discount rates: • Benefits: NR • Costs: NR Economic perspective: Medicaid Measures of uncertainty: NR Modelling method and assumptions: NR	*Primary outcomes:* HI yielded significantly greater benefit in caregiver quality of life with the difference in the change across groups exceeding the clinically significant threshold of 0.5. Urgent health services used declined significantly more in the HI. Symptom days decreased more in the HI but the difference between groups was not significant. Improvement s in quality of life and urgent health service use were greater in the HI. *Secondary outcomes:* Missed work days did not improve in either group. Need for asthma controller	**Source of funding:** National Institute of Environmental Health Sciences; Seattle Partners for Healthy Communities, the Nesholm Foundation, and the Seattle Foundation **Other:** NA

				medications and missed school or child care decreased only in the HI. Kitchen ventilation improved more in LI. No increase in frequency of washing sheets or dusting nor reduced exposure to pets. Urgent care costs (hospital admissions, emergency department visits, and unscheduled clinic visits) during the 2 months before the exit interview were $6,301–$8,856 less in the HI group ($57 to $80 per child) relative to the LI group. Within the high-intensity group, the estimated decrease in 2-month costs between baseline and exit	

				ranged from $22,084 to $36,700 ($201 to $334 per child), and within the LI group, they ranged from $19,246 to $32,756 ($185 to $315 per child). **Secondary analysis:** NR **Attrition details:** 78% (number that completed the study) **Main results/conclusion:** The high-intensity group improved significantly more than the low-intensity group in its paediatric asthma caregiver quality of life score (P=.005) and asthma related urgent health services use (P=.138). Participants actions to reduce triggers generally increased in the high-intensity group. The	

				projected 4-year net savings per participant among the high-intensity group relative to the low-intensity groups were $189-$721 Community health workers reduces asthma symptom days and urgent health services use while improving caregiver quality of life score. Improvement was greater a higher-intensity intervention The HI may ne cost saving relative to the LI. The estimated marginal cost of the HI intervention relative to the LI was $124,000 or $1,124 per child	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Kumpusalo et al.	**Source population:** Working-aged people (20-64 years)	**Interventions:** *Describe in detail, including:* • What delivered: Seminars, study	**Outcomes:** Serum cholesterol levels, plasma vitamin C	**Primary results:** • Benefits: See below • Costs: 1996 prices,	**Limitations identified by author:** NR

Year: 1996 **Bibliographic reference:** Kumpusalo, E., Neittaanmaki, L., Halonen, P., Pekkarinen, H., Penttila, I., Parviainen, M. (1996). Finish Healthy Village Study: impact and outcomes of a low-cost local health promotion programme. Health Promotion International, 11 (2), 105-115 **Type of economic analysis:** Cost consequence analysis **Overall quality assessment:** Potentially serious limitations **Study design:** Quasi-experimental **Aim of the study/research**	**Country:** Finland **Setting:** Six rural villages in 1986 (health profiles in 4 villages. Then programme in 2 villages (intervention) and 2 villages were controls) **Data sources:** Primary research	groups, courses and sport groups, walking campaigns, walking tests • By whom: Action groups and invited lecturers from different disciplines, such as health, self-health care, health behaviour, nutrition, social psychology, social support, medicine, occupational health care and rehabilitation. 30 invited speakers and 12 teachers from the adult education institute worked for the programme. • To whom: Working aged individuals • How delivered: Lectures • When/where: The adult education institute • How often: *Seminars* - once a month during the autumn and spring terms if the local education institute. *Study groups, courses and sports groups* - weekly. *Walking campaigns and walking tests* - twice a year. • How long for: 3 year in 2 village (intervention, health promotion	concentrations, diastolic blood pressure, body mass index, leisure time physical activity level, proportion of physically inactive people Outcome evaluation: Survey; laboratory analysis for C concentrations Method of analysis: NR Time horizon: 3 years Discount rates: • Benefits: NR • Costs: NR Economic perspective: NR Measures of uncertainty: NR Modelling method and assumptions: NR	presented in £ and FIM (Finnish Marrka).The field costs of the surveys: £20,000. Laboratory analysis: £13,000. Total cost for the evaluation of the programme per participant were £40. The annual extra cost per village ~£750. The mean annual cost of the programme per villager 30FIM. The mean cost of a 2hr village seminar was £105 • ICER (for CUA, CEA): NR • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic: Mean value of serum cholesterol decreased in the intervention	**Limitations identified by review team:** No formal cost-effectiveness ratio was provided **Evidence gaps and/or recommendations for future research:** As above **Source of funding:** The National Board of Health and the National Board of Education **Other:** NA

question: To assess the impacts, outcomes and cost-effectiveness of the Healthy Village Study programme. **Applicability:** Partly applicable		programme) and 2 others served as controls **Comparator:** No intervention **Sample sizes:** • Total N= *Health profile analysis* – first survey: 793 (427 men, 366 women) in 4 villages. Second survey - 845 (435 men, 410 women) in 6 villages • Intervention N= Only 524 people who participated in both surveys were assessed for the evaluation of a possible change in health indicators • Control N= NR **Type of community engagement intervention:** Interventions centred on the concept of empowerment		villages from 6.89 to 6.23 mmol/l (10%) and in control villages from 6.41 to 6.02 mmol/l (6%). The mean proportion of HDL-cholesterol of the total increased 28% in the intervention villages and 21% in the control villages. Plasma vitamin C concentrations mean value increased 53% and in the control villages 29% **Secondary analysis:** NR **Attrition details:** Participation in the study varied in the villages **Main results/conclusion:** The mean value of serum cholesterol decreased in the intervention villages from 6.89 to 6.23 mmol/l in the control villages from	

				6.41 to 6.02 mmol/l. The mean proportion of HDL-cholesterol of the total increased 28% in the intervention villages and 21% in the control villages. The biggest improvements took place in mean plasma vitamin C concentrations. In the intervention villages, the mean value increased 53% from 42.1 to 64.6 mmol/l and in the control villages 29% from 43.5 to 56.3 mmol/l. A decrease in mean systolic blood pressure from 142 to 137 mmHg took place in the intervention villages and from 141 to 134 mmHg in the control villages. No decrease was achieved in mean diastolic blood pressure and body mass indices. The programme was cost-effective as far as nutritional risk factors were concerned. Changing physical exercise patterns	

				of people in rural villages proved to be more difficult than changing dietary habits	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Lindqvist et al. **Year:** 2001 **Bibliographic reference:**	**Source population:** Two risk populations: children and teenagers and the elderly and three risk environments:	**Interventions:** *Describe in detail, including:* • What delivered: Videos demonstrating road safety for parents and child minders. For	**Outcomes:** Incidence of health care treated injuries; incidence of non-trivial injuries treated in health	**Primary results:** • Benefits: See below • Costs: (1995 SEK) average social economic cost per	**Limitations identified by author:** The effects are significant after two years of intervention, but we

Lindqvist, K., Lindholm, L. (2001). A cost-benefit analysis of the community-based injury prevention programme in Motala, Sweden - a WHO Safe Community. Public Health, 115, 317-322 **Type of economic analysis:** Cost-benefit analysis **Overall quality assessment:** Potentially serious limitations **Study design:** Quasi-experimental evaluation involving an intervention population and a non-random control population **Aim of the study/research question:** To calculated cost and benefits caused	traffic safety, sports and recreation, and the workplace **Country:** Motala, Sweden **Setting:** NR **Data sources:** Primary research	elderly – pamphlets, checklists to avoid injuries. Also changes in environment; trainers and coaches educated to avoid injuries; upgrade machines and work place designs • By whom: Councils • To whom: About 41,000 inhabitants • How delivered: Videos, media, • When/where: Environment • How often: NA • How long for: Pre implementation study 52 weeks (Oct. 1983-Sept.1984). Post implementation study 52 weeks (Jan.1989-Dec.1989) **Comparator:** NR **Sample sizes:** • Total N= NA • Intervention N= 41,000 • Control N= NR **Type of community engagement intervention:** Collaboration between health and other statutory services	care; trivial injuries (reported from earlier works) Outcome evaluation: Baseline and follow up measurements, prospective registration with interviews for all acute care episodes intervention and control areas, and retrospective analysis from the medical records after the care episode Method of analysis: NR Time horizon: 3 years Discount rates: • Benefits (NR) • Costs (NR) Economic perspective: Cost of injuries in a societal perspective 1983/84 and 1989 Measures of uncertainty: NR	case of injuries classified according to types of injury and degree of severity in 1983/84 with 1995 price level. Cost of intervention programme *(all in thousands)*: County council personnel 8,663 SEK, other 1,722; Working groups: children and teenagers 64SEK, elderly persons 11SEK, traffic safety 67SEK, sports and physical exercise 12SEK, the work place 31SEK; Total 10,571SEK • ICER (for CUA, CEA) : NA • B:C ratio (for CBA): NR • Separate B and C for each consequence of CCA : NA • Other measures to be confirmed with NICE for each topic: The incidence of health	do not know if they are consistent over the long term. However, a second follow-up conducted for 1996 may shed some light on this dilemma. The costs and benefits of the intervention are in some respects difficult to estimate. One intervention strategy was modification of the physical environment, of which authors' knowledge is incomplete. For instance, the local municipality authorities are responsible for the traffic environment in Motala and a grant is provided annually for the purpose of maintenance of the roads and improvements in traffic safety. However, during the intervention

by a safe community injury prevention programmes **Applicability:** Partly applicable		and communities	<u>Modelling method and assumptions:</u> Employer's costs on the margin are an acceptable measure of production losses caused by disease or injuries	care treated injuries in the intervention area decreased by 13% (95%CI: 9 – 16%) from 119 (95% CI: 115 – 122) per 1000 population-years to 104 (95% CI: 101 – 107). In the control area, the corresponding injury incidences were 104 (95%CI: 100 – 108) and 106 (95% CI: 102 – 109). The incidence of non-trivial injuries treated in health care was found to have decreased by 41% (CI: 37 – 45%), while trivial injuries increased by 16% (CI: 9 – 22%). [Reported from earlier work, summarized in this paper] **Secondary analysis:** NR	period, this grant was not increased. The consequence of the community analysis was that new information was gathered and analysed which was likely of importance when the use of the grants was decided. Thus, existing resources for traffic safety purposes were used more efficiently because of the community analysis. For example, crossroads frequently hit by accidents were identified and measures aimed at improving visibility were realised. Information about resources used for modification of the physical environment in companies and households is lacking. On the other hand, this

				Attrition details: NR **Main results/conclusion:** The presented calculations show that costs of injuries in a societal perspective decreased from 116million Swedish Crowns (SEK) to 96million SEK, while the cost for the intervention was estimated at approximately 10 million SEK. Thus, the safe community injury prevention programme in Motala should be judged as cost-effective	study is also incomplete regarding benefits accruing to companies and households. One can suspect that a company investing in a good working environment also expects some economic benefits in the long run, and these benefits are not accounted for in this study. In the household perspective, investments in bicycle helmets or more safe cars are in the first place most likely motivated with reduced future risk for death, suffering and pain. Reduced costs for health care are of course only a crude proxy, not able to capture all valuable consequences. Thus, this kind of cost-

					benefit analysis only gives a partial picture, although we believe that some of the most important costs and benefits are captured **Limitations identified by review team:** Details are presented elsewhere **Evidence gaps and/or recommendations for future research:** See above **Source of funding:** NR **Other:** NA

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Long et al. **Year:** 1995 **Bibliographic reference:** Long, D. G., Funk-	**Source population:** Native American Women, Infants and Children (WIC) participants (women)	**Interventions:** *Describe in detail, including:* • What delivered: Provide information, counselling, and support to WIC prenatal and postpartum participants to assist	**Outcomes:** Breastfeeding rates and duration Outcome evaluation: Data was collected from	**Primary results:** • Benefits: See below • Costs: Cost of employing 2 part-time peer counsellors at $4.50/hour was less	**Limitations identified by author:** NR **Limitations identified by review team:** Authors indicate

Archuleta, M. A., Geiger, C. J., Mozar, A. J., & Heins, J. N. (1995). Peer counselor program increases breastfeeding rates in Utah Native American WIC population. Journal of Human Lactation: Official Journal of International Lactation Consultant Association, 11(4), 279–284 **Type of economic analysis:** Cost-consequence analysis **Overall quality assessment:** Potentially serious limitations **Study design:** Quasi-experimental **Aim of the 3 mstudy/research question:** To assess the effectiveness of	**Country:** USA **Setting:** Indian Health Care Centre (Salt Lake City) **Data sources:** Primary research	them in their breastfeeding experience • By whom: Counsellor who had successfully breastfed at least one infant for a minimum of who months, spoke English and Navajo, owned a phone, had access to reliable transportation and willing to talk to unfamiliar people • To whom: Native American pregnant women • How delivered: By telephone, home visits, and/or clinic visits prenatally, and postpartum • When/where: See above/below • How often: Prenatally, at one, two and four to six weeks postpartum • How long for: 3 months; Peer counsellors were employed for entire 10 months of data collection **Comparator:** Historical control - Women enrolled in the WIC programme at the Salt Lake City Indian Health Care Center who gave birth between January 1991 and January 1992	the "Peer Counsellor Referral Form". This form was completed for each assignment and included prenatal and postnatal information as well as a record of contacts between the peer counsellor and the mother. As long as a mother was nursing at least one time per day, she was classified as a breastfeeding mother Method of analysis: SPSS-4.0 Statistical package; chi-square likelihood ratio test; duration data were analysed using the non-parametric Mann-Whitney test Time horizon: Follow-up 3 months; data is presented at 6 months for control and experimental groups Discount rates:	than $1,000 for the 10 months data. Baby milk costs $73/months, $876/year, $55,188/year for all participants of WIC programme • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NR • Other measures to be confirmed with NICE for each topic: Among all women in the study, breastfeeding initiation rates were almost 15% higher in the experimental group than in the control group. Of subjects who were followed for a full three months, initiation rates were significantly higher in the peer counsellor	several cultural barriers for Native American women and their beliefs on breastfeeding **Evidence gaps and/or recommendations for future research:** Conduct a similar study in general population **Source of funding:** Utah State WIC programme **Other:** NA

breastfeeding promotion by counsellors **Applicability:** Partly applicable		**Sample sizes:** • Total N= 108 • Intervention N= 41 • Control N= 67 **Type of community engagement intervention:** Peer/lay delivered interventions	• Benefits: NR • Costs: NR <u>Economic perspective:</u> WIC programme <u>Measures of uncertainty:</u> NR <u>Modelling method and assumptions:</u> NR	group (84%) than the control group (70%) and duration was longer in the experimental group through 3 months postpartum **Secondary analysis:** NR **Attrition details:** NA **Main results/conclusion:** Peer counsellor support increased initiation of breastfeeding and duration of breastfeeding for at least first 3 months postpartum. The rate of breastfeeding at 6 months postpartum for the experimental group was lower than expected. The breastfeeding rate was similar in both groups at six months (Table 2, pg. 282)	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: McIntosh et al. **Year:** 2009 **Bibliographic reference:** McIntosh, E., Barlow, J., Davis, H., & Stewart-Brown,	**Source population:** Women in antenatal period **Country:** UK **Setting:**	**Interventions:** *Describe in detail, including:* • What delivered: Home visiting • By whom: Specially trained home visitors • To whom: Women in antenatal period	**Outcomes:** Parent–infant interaction which would be expected to improve parenting and reduce infant abuse and neglect	**Primary results:** • Benefits: See below • Costs: (2004 prices) the mean 'societal costs' in the control and intervention arms were £3874 and	**Limitations identified by author:** The main limitation of this paper is the inability to link these trial-based intermediate outcomes to more

S. (2009). Economic evaluation of an intensive home visiting programme for vulnerable families: a cost-effectiveness analysis of a public health intervention. Journal of Public Health (Oxford, England), 31(3), 423–433. doi:10.1093/pubmed/fdp047 **Type of economic analysis:** Cost-effectiveness analysis **Overall quality assessment:** Minor limitations **Study design:** Economic evaluation alongside a multicentre randomized controlled trial **Aim of the study/research question:** The objective of this study was to evaluate the cost-effectiveness of an intensive home visiting programme directed at	Homes of antenatal women **Data sources:** Primary research	• How delivered: Intensive weekly home visiting • When/where: Beginning up to 6 months antenatally. At homes • How often: Weekly • How long for: 18 months **Comparator:** Standard care **Sample sizes:** • Total N= 136 women • Intervention N= 67 (intensive home visiting) • Control N= 64 (standard services) **Type of community engagement intervention:** Peer/lay delivered interventions	Outcome evaluation: A number of measures were therefore selected to cover the range of possible outcomes, including maternal sensitivity and infant cooperativeness using the CARE Index (a predictor of infant abuse and neglect); infant mental and emotional development using the Brief Infant and Toddler Social and Emotional Assessment (BITSEA). Infant development was assessed independently using the Bayley Scales of Infant Development, and maternal mental health using the GHQ. The quality of the infant's home environment was assessed using the HOME Inventory. Other outcomes included the	£7120, respectively, a difference of £3246. The mean 'health service only' costs were £3324 and £5685 respectively, a difference of £2361. The incremental benefits were delivered at an incremental societal cost of £3246 per woman. • ICER (for CUA, CEA): (In the CEA results, a hypothetical decision makers WTP threshold is used to judge cost-effectiveness in the first instance). The ICER point estimates for maternal sensitivity and infant cooperativeness are £2178 and £1621, respectively. • B:C ratio (for CBA): The assumption is that this removal is a	substantial longer term benefits. One of the complexities of the health economic analyses authors present in this study follows from the fact that the specially trained home visitors were better able to identify infants in need of child protection services than professionals working in traditional community health and social services. This added further cost to the home visiting arm with no measurable gain in the short term apart from reduction in exposure. Without long-term follow-up, it is impossible to estimate the extent of benefit from such reductions, but such follow-ups are challenging to

vulnerable families during the antenatal and postnatal periods **Applicability:** Directly applicable			number of infants identified as maltreated and removed from the home. This latter outcome, i.e. infants removed from the home, is interpreted as a 'good' outcome at least for the short term as the infant would no longer be subjected to maltreatment <u>Method of analysis:</u> See above <u>Time horizon:</u> 18 months of intensive home visiting (intervention) <u>Discount rates:</u> • Benefits: 3.5% • Costs: 3.5% <u>Economic perspective:</u> Societal perspective <u>Measures of uncertainty:</u> Sensitivity analysis was carried out	'good' outcome since it obviates further neglect and abuse at least in the short term. None were identified in the control group thereby producing a mean effectiveness difference of 4 out of 67 or 0.059. While this is a non-significant difference, further insight to this potential effect can be tentatively explored using cost-effectiveness criteria. The ICER for this non-significant outcome is £3246/0.059, £55 016 • Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic: The maternal sensitivity and infant cooperativeness	undertake **Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** As above **Source of funding:** Department of Health and The Nuffield foundation **Other:** NA

			on the perspective adopted Modelling method and assumptions: NR	components of the CARE Index outcome measure were the only statistically significantly improved outcomes in the treatment group (maternal sensitivity: 8.20 and 9.27 for the control and intervention, respectively; infant cooperativeness: 7.92 and 9.35 for the control and intervention, respectively) **Secondary analysis:** Sensitivity analysis of the ICER on this parameter reveals that if we reduce the number of infants identified from 4 (6%) to 2 (3%), the ICER, i.e. the mean additional cost of reducing exposure by 1 month, becomes £2505. However, if we increase	

				the number of children identified from 4 (6%) to 8 (12%), the ICER or mean additional cost of reducing exposure by 1 month becomes £1284 **Attrition details:** NR **Main results/conclusion:** The results of the study provide evidence to suggest that, within the context of regular home visits, specially trained home visitors can increase maternal sensitivity and infant cooperativeness and are better able to identify infants in need of removal from the home for child protection. The extent to which these benefits are 'worth' the societal cost of £3246 per woman however is a matter of judgment. The results suggest that if decision makers were willing to pay £1400 to	

				reduce exposure to abuse and neglect by 1 month, the home visiting intervention would have a 75% probability of being cost-effective. A WTP of £2700 gives it a 90% probability, and £3100 a 95% probability that the intervention would be cost-effective	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Office of the Deputy Prime Minister **Year:** 2004 **Bibliographic reference:** Office of the Deputy	**Source population:** Deprived communities **Country:** England and Wales **Setting:** Urban	**Interventions:** *Describe in detail, including:* • What delivered: Presence in the communities • By whom: Wardens • To whom: Communities • How delivered: Wardens'	**Outcomes:** Increased resident satisfaction; reduced fear of crime, particularly for older people; considerable decline in the overall	**Primary results:** • Benefits: See below • Costs: £29.2m over the two-and-a-half years • ICER (for CUA, CEA): NA	**Limitations identified by author:** NR **Limitations identified by review team:** NA **Evidence gaps and/or**

Prime Minister. (2004). Research Summary 8; Neighbourhood Wardens Scheme Evaluation; Key findings and lessons. **Type of economic analysis:** Cost-benefit analysis **Overall quality assessment:** Potentially serious limitations **Study design:** Programme evaluation **Aim of the study/research question:** To evaluate the Neighbourhood Wards Programme **Applicability:** Directly applicable	**Data sources:** Primary research	scheme • When/where: In the deprived communities • How often: NR • How long for: Between June 2001 and May 2003 (2.5 years) **Comparator:** No intervention **Sample sizes:** • Total N= NA • Intervention N= 84 schemes • Control N= NR **Type of community engagement intervention:** Interventions centred on the concept of empowerment	rate of residents experiencing crime; perceived improvement in environmental problems such as graffiti, fly-tipping, litter and dog fouling; a small decline in residents perceiving youth anti-social behaviour (ASB) Outcome evaluation: Survey Method of analysis: NR Time horizon: Between June 2001 and May 2003 Discount rates: • Benefits: NR • Costs: NR Economic perspective: Public Measures of uncertainty: Sensitivity analysis (10%)	• B:C ratio (for CBA): 286,000 fewer offences in the intervention programme. 'Average' offence costs £2,000. Net Present Value is £575.5 million over the two-and-a-half years of the programme. • Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic: Quality of life in scheme areas has improved since the introduction of neighbourhood wardens. Over 25% of residents report an increase in satisfaction. 6% increase in residents saying that warden areas had got better as a place to live in the last 18 months	**recommendations for future research:** NA **Source of funding:** NR **Other:** NA

			Modelling method and assumptions: NR	and an overall increase in the number of residents who think their area is a good place to bring up children. 0.7% in residents perceiving 'teenagers hanging around' as a problem, particularly significant when compared to a 5.4% increase in non-warden areas. 6.5% decline in worry about bogus callers in warden areas but a 4.9% increase in comparator areas. 2.6% decline in the overall rate of crime in warden areas. This compares to a slight increase of 4.7% in crime in the comparator areas **Secondary analysis:** If 10% of the reduction in crime were due to schemes this would have a	

				value of £31M, outweighing the costs of investing in the programme **Attrition details:** NR **Main results/conclusion:** Wardens have reduced fear of crime (FOC) on deprived estates, particularly for older people. Evidence of impact comes from all strands of the evaluation. The residents survey found that reductions in the level and number of worries about crime for residents as a whole were greater than in control areas. The greatest gains have been made for fear of mugging and street robberies: a ten percent decline compared to a small increase in areas without wardens. Residents who 'see wardens' are less worried	

				about being mugged or robbed in the area that they live in than residents as a whole	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Paskett et al. **Year:** 2006 **Bibliographic reference:** Paskett, E., Tatum, C., Rushing, J., Michielutte, R., Bell, R., Long Foley,	**Source population:** Triracial (white, Native American, African American) rural population of women who received heath care from Robeson Health Care Corporation	**Interventions:** *Describe in detail, including:* • What delivered: Educational intervention to address specific barriers experienced by rural women in a manner that was culturally acceptable to all racial groups. The aim was to increase	**Outcomes:** Mammography use; changes in barriers, beliefs and knowledge Outcome evaluation: A follow up survey and medical record-verified	**Primary results:** • Benefits: See below • Costs: The cost of delivering the intervention $329,054 (for LHA and LHA supervisor salaries and benefits plus	**Limitations identified by author:** Limitations of the study include the limited generalizability of the results to other populations, because the population was

K., Reeves, K. (2006). Randomized trial of an intervention to improve mammography utilization among a triracial rural population of women. Journal of the National Cancer Institute, 98(17), 1226–1237. doi:10.1093/jnci/djj333 **Type of Economic analysis**: Cost-consequence analysis **Overall quality assessment:** Potentially serious limitations **Study design:** A randomized controlled trial **Aim of the study/research question:** To test whether a lay health advisor (LHA) intervention based on	(RHCC), age over 40 **Country:** Robeson County, NC, USA **Setting:** Rural **Data sources:** Primary research	awareness of the benefits of early detection of breast cancer and to encourage women to reduce their own risk of breast cancer death by identifying and reducing important barriers to obtaining mammography screening and by providing basic knowledge and education about breast, breast abnormalities, and breast cancer screening • By whom: Lay health advisor (LHA). Two Native American and one African American women who lived in the community were hired as the LHAs. These women - a former nurse, a social worker, and a research study interviewer - were selected because they had good social skills; were organized, professional, and courteous; and could work flexible hours • To whom: Women who did not have a mammogram in the last 12 months and were over age 40 • How delivered: Face-to-face interactive education programme • When/where: At homes	mammography. Changes in barriers, beliefs and knowledge were analysed by survey Method of analysis: Chi-square test. Linear regression, Mantel – Haenszel statistics, and logistic regression were used to com pare barriers, beliefs, and knowledge from baseline to follow-up and to identify baseline factors associated with mammography Time horizon: The study was conducted from February 1998 – January 2002. Follow up 12 months Discount rates: • Benefits: NR • Costs: NR Economic perspective: Health system	supply and travel costs). Each additional mammogram in the LHA group cost $4,986 in direct costs • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: Changes in modifiable factors are presented in the tables. See below • Other measures to be confirmed with NICE for each topic: The women assigned to the LHA intervention had higher mammography rates at the follow-up assessment than the comparison group (42.5% vs. 27.3%), and this effect was found for all three racial groups. The intervention showed a statistically significant	rural, low income, and of three racial groups, and the cost of delivering such an in-person intervention for physician offices. The use of medical record verification reduced reporting bias; however, some data on mammography use could have been missing. Authors know of no reason to believe that there would be any difference in the amount of missing information on screening test receipt by treatment arm. The high response rates to the study and follow-up survey also reduce respondent bias. These results should be replicated in other settings to assess the transferability of the intervention. Other ways to deliver the

behavioural theories improved mammography attendance in triracial population **Applicability:** Partly applicable		• How often: Three in person visits with educational materials and follow up phone calls and mailing after each visit • How long for: The intervention programme was administrated over a 9 to 12 months period. First visit 45-60 minutes, second visit 30-45, phone calls for 3-9 months, final visit 10-14 minutes **Comparator:** Six months after random assignment, women in the comparison group were sent a letter and a National Cancer Institute (NCI) brochure from Robeson Health Care Corporation (RHCC) calling attention to the need for regular cervical cancer screening. Three months after completing the follow-up assessment, women in the comparison group were sent a letter from RHCC inviting them to obtain a mammogram and an NCI brochure (designed for low-literate women) about mammography **Sample sizes:** • Total N= 851 • Intervention N= 433 (LHA group)	Measures of uncertainty: NR Modelling method and assumptions: NR	association with mammography receipt within each racial group: African Americans (RR= 1.54, P=0.008), Native Americans (RR=1.58, P= 0.002), and whites (RR=1.54, P= 0.024) **Secondary analysis:** NR **Attrition details:** Overall participation in the baseline survey – 88% **Main results/conclusion:** At follow-up, 42.5% of the women in the LHA group and 27.3% of those in the comparison group had had a mammogram in the previous 12 months (relative risk = 1.560 Compared with those in the comparison group, women in the LHA group displayed statistically significantly	intervention, e.g., using trained volunteers, may be feasible and could reduce costs **Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** National Cancer Institute, National Institutes of Health **Other:** NA

		• Control N= 418 (usual care) **Type of community engagement intervention:** Peer/lay delivered interventions		better belief scores (difference = 0.46 points on a 0-10 scale) and reduced barriers at follow-up (difference = -0.77 points), after adjusting for baseline scores. LHA interventions can improve mammography utilization. Future studies are needed to assess strategies to disseminate effective LHA interventions to underserved populations	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Pinkerton et al. **Year:** 1998 **Bibliographic reference:** Pinkerton, D., S., Holtgrae, R., D., DiFranceisco, J., W., Stevenson, Y., L., Kelly,	**Source population:** Gay men **Country:** Biloxi, Mississippi, USA **Setting:** 2 gay bars	**Interventions:** *Describe in detail, including:* • What delivered: Interviews encouraging behaviour risk reduction • By whom: Gay men, "popular opinion leaders" • To whom: Gay men • How delivered: Conversations	**Outcomes:** Number of infections averted and QALYs gained Outcome evaluation: Survey 2 months prior the intervention, at baseline and 3 months	**Primary results:** • Benefits: See below • Costs: (1999 prices) Intervention cost $17,150, or about $65,000 per infection averted, and was therefore cost-saving, even under very	**Limitations identified by author:** Several limitation of this study should be noted, including the retrospective collection of cost data, estimation of key epidemiological

A., J. (1998). Cost-Effectiveness of a Community-Level HIV Risk Reduction Intervention **Type of economic analysis:** Cost-effectiveness analysis/ cost-utility analysis **Overall quality assessment:** Minor limitations **Study design:** Mathematical model of HIV transmission **Aim of the study/research question:** To evaluate the cost-effectiveness of a community-level HIV prevention intervention that used peer leaders to endorse risk reduction among gay men	**Data sources:** Primary research	about behaviour risk reduction and visibly endorse safer sex norms • When/where: At 2 gay bars • How often: NR • How long for: At least 2 weeks **Comparator:** 2 comparison cities (here they were also given survey to control for possible temporal or other confounds) **Sample sizes:** • Total N= NR • Intervention N= 449 • Control N= NR **Type of community engagement intervention:** Peer/lay delivered interventions	after the intervention Method of analysis: NR Time horizon: 2 months of intervention effectiveness is assumed. Survey at 3 months Discount rates: 3% and 5% annual rate • Benefits: QALYs lost per infection: 21.21 (0%), 11.26 (3%), 7.62 (5%). HIV infections averted: 0.262 for all. QALYs saved: 5.56 (0%), 2.95 (3%), 2.00 (5%). • Costs: Intervention costs - $17,150 for all. Lifetime medical costs $118,892 (0%), $87,045 (3%), $71,143 (5%). Medical costs saved $31,150 (0%), $22,896 (3%), $18,639 (5%). Cost	conservative modelling assumption. This $17,150 includes cost of staff compensation $6,700, incentives given to popular leaders - $5,300, materials and other expenses - $4,100, $1000 – overhead • ICER (for CUA, CEA): The base-case cost-effectiveness ratio (cost per HIV infection averted) was about $65,000. Because the lifetime medical care costs associated with HIV and AIDS are even greater, therefore, the intervention would actually be cost-saving. Since a cost-saving program is necessarily cost-effective, there was no need to calculate the cost-utility ratio • B:C ratio (for CBA): NA	parameters, modelling to derive outcome data and reliance on respondents' self-reports of their sexual behaviours. However, these concerns are mitigated by the results of the sensitivity analyses, which indicate that the intervention remains cost-effective over a range of reasonable parameter values. External validity is also a critical concern. The intervention was conducted in 1989 among gay men and a small southern city, and the results may not generalize to other populations differing in pre-existing risk level and motivation to change. The cost of intervention implementation might be different in other

Applicability: Partly applicable			effectiveness ratio, $65,478 for all Economic perspective: Societal perspective Measures of uncertainty: Sensitivity analysis on costs and benefits Modelling method and assumptions: NR	• Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic: Intervention prevents 0.262 infections (about 43% of which were "secondary") and saving just under 3 QALYs (discounted at 3%). Although this effect may appear small, only a very limited 2-month period of intervention effectiveness was assumed. The intervention remained cost-saving at 3% discount rate **Secondary analysis:** Sensitivity analyses at rates of 0% and 5% **Attrition details:** NR **Main results/conclusion:**	areas. **Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** The National Institute of Mental health **Other:** NA

				For this intervention, the cost of HIV prevention was more than offset by savings in averted future medical care costs. Community-level interventions to prevent HIV transmission that use existing social networks can be highly cost-effective	

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Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Pugh et al. **Year:** 2002 **Bibliographic reference:** Pugh, L. C., Milligan, R. A., Frick, K. D., Spatz, D., & Bronner, Y. (2002). Breastfeeding duration, costs, and benefits of a	**Source population:** Low income mothers **Country:** USA **Setting:** Hospitals, homes **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: Usual care plus supplementary visits from the community health nurse/peer counsellor team, including daily visits during hospitalization, and visits at home • By whom: Community health nurse/peer counsellor	**Outcomes:** Duration of breastfeeding, average health care services use per infant Outcome evaluation: Infant outcome data was collected at 3 and 6 months in person, and	**Primary results:** • Benefits: See below • Costs: (1999 prices) Intervention costs $301 per mother (contact time and mileage only). Including actual wages paid, cost of intervention is	**Limitations identified by author:** Small sample size, results only assessed for 6 months, though intervention provides long term benefits, no consideration was given to the value that the mothers place on

support program for low-income breastfeeding women. Birth (Berkeley, Calif.), 29(2), 95–100 **Type of economic analysis:** Cost-consequence analysis **Overall quality assessment:** Potentially serious limitations **Study design:** Randomized controlled trial **Aim of the study/research question:** Evaluate a community health nurse/peer counselor intervention to increase the duration of breastfeeding among low income, predominately minority women		• To whom: Low income mothers • How delivered: Daily visits during hospitalization and visits at home, telephone support • When/where: Hospital and home visits, and telephone support • How often: Visits in weeks 1, 2, and 4, and at the team's discretion. Telephone support twice weekly through week 8 and weekly through month 6 (even if mother stopped breastfeeding) • How long for: For 6 months after delivery **Comparator:** Usual care (support from hospital nurses, assistance by means of a telephone "warm line", and one hospital visit by a lactation consultant if the participant delivered on a weekday) **Sample sizes:** • Total N= 41 • Intervention N=21 • Control N=20	by telephone at postpartum weeks 1, 2, 3, 4, and 6, and months 4 Method of analysis: NR Time horizon: 6 months Discount rates: • Benefits: NR • Costs: NR Economic perspective: NR Measures of uncertainty: NR Modelling method and assumptions: NR	increased to $795 per participant, $54 more per mother than the usual care. Total cost of intervention $3,840, control $3,194, difference $646 per mother (table 2) • ICER (for CUA, CEA): NR • B:C ratio (for CBA): NR • Separate B and C for each consequence of CCA: NR • Other measures to be confirmed with NICE for each topic: After week 1, more mothers in the intervention group were breastfeeding at all time periods. At 3 months, 45% (9) were exclusively breastfeeding versus on 25% (5) in the usual care. At 6 months, 30% (6) vs. only 15% (3)	breastfeeding relative to formula feeding. **Limitations identified by review team:** No attempt to costs benefits of breastfeeding or health care costs **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** National Institute of Nursing research **Other:** NA

Applicability: Partly applicable		**Type of community engagement intervention:** Peer/lay delivered interventions		respectively. At 6 months, 45% were still at least partially breastfeeding in the intervention group compared with 35% in the usual care group. The intervention group spent an average 40hrs more feeding their infants than the usual care group and used a significantly lower amount of concentrated formula. Other indices were similar in the 2 groups. **Secondary analysis:** Sensitivity analyses: NR **Attrition details:** NR **Main results/conclusion:** Community health nurse and peer counsellor support can increase breastfeeding duration in	

				low-income women and has the potential to reduce total costs including the cost of support	

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Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Reijneveld et al. **Year:** 2003 **Bibliographic reference:** Reijneveld, S., Westhoff, M., & Hopman-Rock, M. (2003). Promotion of health and physical activity improves the	**Source population:** Turkish immigrants aged 45 and over **Country:** The Netherlands **Setting:** Welfare services in six Dutch cities	**Interventions:** *Describe in detail, including:* • What delivered: Adapted Healthy & Vital programme: Sessions consisting of health education and exercise • By whom: A Turkish peer educator • To whom: Turkish immigrants • How delivered: Educational	**Outcomes:** Physical and mental wellbeing, knowledge on health and disease; physical activity Outcome evaluation: General and physical wellbeing was calculated from Short Form (SF) -	**Primary results:** • Benefits: See below • Costs: Costs per programme were €1,400; single largest contributors to costs were fees for the Turkish health educator (€455) and the exercise	**Limitations identified by author:** Selection bias and information bias might have influenced the findings; imprecise measurements may explain the negative findings regarding knowledge and

mental health of elderly immigrants: results of a group randomised controlled trial among Turkish immigrants in the Netherlands aged 45 and over. Journal of Epidemiology and Community Health, 57(6), 405–411. doi:10.1136/jech.57.6.405 **Type of economic analysis:** Cost consequence analysis **Overall quality assessment:** Potentially serious limitations **Study design:** Randomised controlled trial **Aim of the study/research question:** The aim of this study was to assess the effect of a short health education and physical exercise	**Data sources:** Primary research	sessions and exercises • When/where: NR • How often: Eight two hour sessions • How long for: 8-10 weeks **Comparator:** "Ageing in the Netherlands" programme. It consists of six sessions of the available welfare series for the elderly. Five sessions take two hours each, the sixth consists of a half day visit **Sample sizes:** • Total N= 126 • Intervention N= 74 (5 groups) • Control N= 38 (5 groups) **Type of community engagement intervention:** Peer/lay delivered	12, mental health from five items of the SF-36, knowledge of health and disease- questions concerning the topic; the Voorrips questionnaire was used too Method of analysis: Paired *t* tests, standard deviations Time horizon: Trail took place in 2001. 10 weeks Discount rates: • Benefits: NR • Costs: NR Economic perspective: NR Measures of uncertainty: NR Modelling method and assumptions: NR	instructor (€240) • ICER (for CUA, CEA): NA • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: Outcomes regarding wellbeing, knowledge, and physical activity are presented in the table. See below • Other measures to be confirmed with NICE for each topic: Mean attendance was 7.45 of 8 sessions among those who completed the programme (SD 0.77) (n=54; 61.1% (31) attended all sessions), and 3.83 (SD 1.83) among drop outs (n=6). Adjustment for background characteristics led to very minor changes in all outcomes (not	physical wellbeing and activity. Because of follow up losses, the power of our study was lower than planned; measurement imprecision may have been comparatively large regarding some outcomes because most of them have not been validated among older Turkish respondents, but only among indigenous Dutch elderly people. Furthermore, regarding the outcome measure on physical activity, the Voorrips questionnaire, authors had to exclude the items that focused on sports activities, although the effects of the programme on physical activity for indigenous elderly people concerned this

programme on the health and the physical activity of Turkish first generation elderly immigrants **Applicability:** Partly applicable				shown). Analyses by subgroup showed an important difference in effect on mental wellbeing by age group (p=0.04). Effects were larger for participants aged 55 years and over than for younger ones. Authors found no effect on other outcomes such as physical wellbeing and activity or knowledge **Secondary analysis:** NR **Attrition details:** NR **Main results/conclusion:** Participants in the intervention group showed an improvement in mental health (effect size: 0.38 SD (95% confidence intervals 0.03 to 0.73), p=0.03); the oldest subgroup also in	part of the questionnaire. These modifications may have contributed to the negative findings regarding physical activity **Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** The Dutch Health Research and Development Council **Other:** NA

				mental wellbeing (effect size 0.75 SD (0.22 to 1.28), p=0.01). No improvements were seen in physical wellbeing and activity, nor in knowledge	

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Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Richardson et al. **Year:** 2008 **Bibliographic reference:** Richardson, G., Kennedy, A., Reeves, D., Bower, P., Lee, V., Middleton, E., Rogers, A. (2008). Cost effectiveness of the Expert Patients Programme (EPP) for patients with chronic conditions.	**Source population:** Patients with a wide range of self-defined long term conditions **Country:** England **Setting:** Community settings in England **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: Interventions increasing participants' self-efficacy through problem solving and goal setting. Topics about relaxation, diet, exercise, fatigue, breaking the "symptom cycle", managing pain and medication, and communication • By whom: 2 lay trainers	**Outcomes:** Patient outcomes, QALYs Outcome evaluation: Costs estimated over a 6 month period from a societal perspective. Health outcomes estimated in terms of quality adjusted life years	**Primary results:** • Benefits: Mean QALY intervention group 0.276, control group 0.258 • Costs: (2003-4) The intervention cost £250 per patient; over 6 months EPP group £1,912, control group £1,930. The EPP group have a	**Limitations identified by author:** NR **Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** NA **Source of funding:** UK Department of

Journal of Epidemiology and Community Health, 62(4), 361–367. doi:10.1136/jech.2006.057430 **Type of economic analysis:** Cost-utility analysis **Overall quality assessment:** Minor limitations **Study design:** Two-arm pragmatic randomised controlled trial design with waiting list control **Aim of the study/research question:** To assess the cost-effectiveness of the Expert Patients Programme (EPP) intervention compared to a treatment as usual alternative **Applicability:** Directly applicable		(people with lived experience of long-term conditions) or volunteer tutors • <u>To whom:</u> Patients with a wide range of chronic conditions, groups of 8-12 • How delivered: NR • When/where: NR • How often: Weekly, each 2.5 hours • How long for: 6 weeks **Comparator:** Patients in the waiting list control could access the intervention after six months. While on the waiting list control, participants received treatment as usual and were advised to continue to manage their condition as they usually would **Sample sizes:** • Total N= 629 randomized • Intervention N= Immediate referral to programme 313, attended programme – 232, completed 6 months follow up - 248 • Control N= Waiting list control	(QALYs) generated by patients' response to the EQ5D at baseline and 6-month follow-up <u>Method of analysis:</u> Euroqol was used to calculate QALYs <u>Time horizon:</u> Trial between April 2003 and March 2005. Intervention – 6 weeks, follow up – 6 months <u>Discount rates:</u> • Benefits: All costs and outcomes fell within a 6-month period and therefore discounting was not appropriate • Costs: All costs and outcomes fell within a 6-month period and therefore	0.020 QALY gain compared with the control group, and a reduced cost of around £27 per patient. Unit costs of resources are also presented • <u>ICER (for CUA, CEA):</u> At a WTP threshold of £20,000 per QALY gained, EPP had a 94% probability of being cost-effective • B:C ratio (for CBA): NA • Separate B and C for each consequence of CCA: NA • <u>Other measures to be confirmed with NICE for each topic:</u> A little impact in either group on the mobility or pain dimensions. Both groups show an increased proportion in the least severe anxiety/depression, with the intervention	Health **Other:** NA

		316, completed 6 months follow up - 273 **Type of community engagement intervention:** Peer/lay delivered interventions	discounting was not appropriate Economic perspective: NICE (societal perspective) Measures of uncertainty: Re-analysing the data in WinBUGS Modelling method and assumptions: NR	group performing slightly better. The EPP group is associated with a better QALY profile and a slightly lower cost. Specifically, the EPP group have a 0.020 QALY gain compared with the control group, and a reduced cost of around £27 per patient **Secondary analysis:** Multiple imputation (with five datasets) was employed as a sensitivity analysis. Values were imputed for each of the dimensions of EQ5D and for each missing item of resource use **Attrition details:** NR **Main results/conclusion:** The intervention group has a 0.020 QALY gain	

				compared with the control group, and a reduced cost of around £27 per patient. The intervention would therefore be considered dominant. While the QALYs gained are small in absolute terms, an additional 0.02 QALY is equivalent to an extra one week of perfect health per year. When the value of a QALY is £20 000 the EPP has a probability of 94% of being cost-effective	

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Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Secker-Walker et al. **Year:** 2005 **Bibliographic reference:** Secker-Walker, R. H., Holland, R. R., Lloyd, C. M., Pelkey, D., & Flynn, B. S. (2005). Cost effectiveness of a community based research project to help women quit smoking. Tobacco Control, 14(1), 37–	**Source population:** Two counties in Vermont and two in New Hampshire, USA **Country:** USA **Setting:** Women aged 18–64 years **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: Cessation services • By whom: The intervention, named Breathe Easy, which • involved delivery of cessation services through support systems, health professionals, educators, work sites, and the media • To whom: Women aged 18-64 • How delivered: NR; described elsewhere	**Outcomes:** Life years saved Outcome evaluation: The 4 year intervention and its efficacy, was assessed by random digit dialling telephone survey at baseline and year 5 Method of analysis: Logistic regression analyses	**Primary results:** • Benefits: Life years saved (LYS) Discount rate 0%: LYS 3,870; P Value 0.15; Intervention $/LYS 509; Direct costs $/LYS 1184; Total grant $/LYS 1772. Discount rate 3%: LYS 1705; P Value 0.06; Intervention $/LYS 1156; Direct costs	**Limitations identified by author:** First, the sample size for the original research project was not calculated with this cost-effectiveness analysis in mind. Although there were 6436 respondents to the year 5 survey, the number in each of the five smoking categories in each of

42. doi:10.1136/tc.2003.005470 **Type of economic analysis:** Cost-effectiveness analysis **Overall quality assessment:** Potentially serious limitations **Study design:** A quasi-experimental matched control design **Aim of the study/research question:** To estimate the cost effectiveness of a four year, multifaceted, community based research project shown previously to help women quit smoking **Applicability:** Partly applicable		• When/where: One county in each state • How often: NR; described elsewhere • How long for: 4 year intervention **Comparator:** One county in each state **Sample sizes:** • Total N= 70,486 • Intervention N= 35,243 (never smoker 18,472) • Control N= 35,243 (never smoker 18,178) **Type of community engagement intervention:** Peer/lay delivered interventions	Time horizon: 5 years Discount rates: • Benefits: 0; 3 and 5% • Costs: 0; 3 and 5% Economic perspective: Granting agency(National Institutes of Health) Measures of uncertainty: NR Modelling method and assumptions: Microsoft Access to build a Monte Carlo life table model. This model used the number of women in each smoking category in each age group derived from the estimates of their respective population means and standard errors	$/LYS 2688; Total grant $/LYS 4022/ Discount rate 5%: LYS 1026; P Value 0.04; Intervention $/LYS 1922; Direct costs $/LYS 4467; Total grant $/LYS 6683 • Costs: (US$2002). For intervention development and implementation, personnel salaries and fringe benefits were $1,348,257, consultant costs, $29,799, and operating costs, $593,424, for total intervention costs of $1,971,480. For evaluation, personnel salaries and fringe benefits were $2,297,467, consultant costs, $6,544, and operating costs, $307,895, for a total of $2,611,906. Direct	the nine age strata in each condition, from which the population estimates were made, was small, averaging 71.5 per cell. Second, this was a quasi experimental, non-randomised design with only two pairs of Matched communities in each condition. Randomised designs with eight or more matched pairs of communities, such as COMMIT and CART, allow for more robust analyses. Third, authors did not include an estimate of life years gained by non-smoking community members as a result of less exposure to second hand smoke, thereby overstating, to a small extent, the cost per life-year saved of

				costs, the sum of intervention and evaluation costs, were $4,583, 386. Indirect costs were $2,273,756, so that total grant costs - that is, the sum of direct and indirect cost - were $6,857,142 • ICER (for CUA, CEA): Authors present cos-effectiveness ratio, not incremental. See above section • B:C ratio (for CBA) • Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic: NA **Secondary analysis:** Sensitivity analyses: Authors conducted several sensitivity analyses. Because of a lack of a mortality data for	the Breathe Easy project **Limitations identified by review team:** Cost-effectiveness ratio table is not very clear and ICER is not presented unless we assume zero costs and benefits of a comparator **Evidence gaps and/or recommendations for future research:** See above limitations **Source of funding:** National Institutes of Health **Other:** Authors cite previous papers for intervention methods

				the 18–24 year old cohort, authors did two further estimates—one to provide a more favourable mortality experience for this age cohort than the base case, and the other a less favourable experience. For the first of these, authors substituted zero mortality for the 18–24 year cohort until the cycled into the 25–29 year age stratum. For the second, authors substituted the known mortality of each smoking category in the 25–29 year age stratum for the unknown mortality of the 18–24 year cohort, which then cycled up the age strata. In additional sensitivity analyses, we examined discount rates of 0% and 5%; indirect cost recovery rates of 10% and 25%; and community volunteer opportunity costs of $10/hour and	

				$25/ hour **Attrition details:** NR **Main results/conclusion:** The cost effectiveness ratio for the intervention, in 2002 US$ per life-year saved, discounted at 3%, was $1156 (90% confidence interval (CI) $567 to '), and for the total grant, $4022 (90% CI $1973 to '). When discounted at 5%, these ratios were $1922 (90% CI $1024 to $15 647), and $6683 (90% CI $3555 to $54 422), respectively	

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Evidence table/Data extraction template for economic studies

Study details	Population and setting	Intervention / comparator	Outcomes and methods of analysis	Results	Notes
Authors: Zhou et al. **Year:** 2003 **Bibliographic reference:** Zhou, F., Euler, G. L., McPhee, S. J., Nguyen, T., Lam, T., Wong, C., & Mock, J. (2003). Economic analysis of promotion of hepatitis B vaccinations among Vietnamese-American children and	**Source population:** Vietnamese-American children and adolescents **Country:** Houston and Dallas, Texas, USA **Setting:** Metropolitan area **Data sources:** Primary research	**Interventions:** *Describe in detail, including:* • What delivered: A media education campaign and community mobilization campaign • By whom: Media campaign and communities • To whom: The study population consisted of ~1200 families of 8692 Vietnamese-American children who were born between 1984 and 1993 residing in the Houston area in 1998, and 5657	**Outcomes:** Receipt of 1, 2, or 3 doses of hepatitis B vaccine before and after the interventions, costs of interventions, cost-effectiveness ratios for intermediate outcomes, intervention cost per discounted year of life saved, and benefit-cost ratio of the interventions	**Primary results:** • Benefits: See below • Costs: $313,904 for the media intervention site (Houston); vaccination costs ($160,581, 51.2%, Houston) and $169,561 for the community mobilization site (Dallas). In the Dallas area, the majority of	**Limitations identified by author:** Caution should be exercised in comparing this study with others. No consideration of the cost of adverse events attributable to vaccination. Nor the wages and workforce participation rates specific to the Houston and Dallas area were used.

adolescents in Houston and Dallas. Pediatrics, 111(6 Pt 1), 1289–1296. **Type of economic analysis:** Cost-effectiveness/cost-benefit analysis **Overall quality assessment:** Minor limitations **Study design:** Programme evaluation **Aim of the study/research question:** To ascertain the cost-effectiveness and benefit-cost ratios of 2 public health campaigns conducted in Dallas and Houston in 1998–2000 for "catch-up" hepatitis B vaccination of Vietnamese-Americans born 1984–		in the Dallas area • How delivered: Billboards, radio ads, print ads, news articles, brochures, calendars, telephone hotline. Between April 1998 and March 2000, the VCHHP organized a Vietnamese-language media campaign and distributed information though outdoor billboards, radio ads, print ads and news articles, brochures, calendars, and a telephone hotline. *Houston:* the content of this campaign was reviewed in focus groups before the start of the campaign. Campaign messages with meaningful cultural symbols were posted on billboards in Vietnamese commercial and residential areas for 41 billboard-months. The presence of the billboards was publicized through press releases, radio spots, and print ads. Campaign radio spots were aired on 2 Vietnamese-language radio stations (Voice of Vietnam and Little Saigon). Eight 30- to 60-second Vietnamese spots were	Outcome evaluation: Vaccination records Method of analysis: NR Time horizon: Between April 1998 – March 2000. Authors considered whole-life infection risk Discount rates: • Benefits: 3% and 5% • Costs: 3% and 5% Economic perspective: NR Measures of uncertainty: Sensitivity analysis: All combinations of 3% and 5% discount rates and 30% to 75% rates of infection, at increments of 15% Modelling method and assumptions: NR	the costs were personnel cost (personnel at VCHPP + personnel at local agency + volunteers, $91,380, 53.9%), but vaccination costs were 37.3% of the total. The federal contract and private sector prices for HepB were $9.00 and $22.285 per dose, respectively. The intervention cost per child receiving any dose, were $363, $101, $267, and $339 for media intervention, and $387, $136, $434, and $420 for community mobilization, respectively. Under the assumptions of 20% and 35% first-dose seroprotection rates, the costs per additional child rendered	**Limitations identified by review team:** NA **Evidence gaps and/or recommendations for future research:** Impact of interventions on the rest of the population **Source of funding:** CDC **Other:** The community mobilization was more labour intensive, and had lower impact on coverage. The media intervention was more expensive, but appears to be slightly more cost-effective and cost-beneficial. Therefore, media education specifically targeted to the Vietnamese community is highly recommended as an effective

1993 **Applicability:** Partly applicable		aired 3663 times over 15 months in the daytime and early evenings. The campaign had 10 advertisements and 6 articles published in 5 local Vietnamese newspapers with a combined circulation of 5000. Using print media, the campaign distributed 6000 26-page, 4-color ink, glossy paper, Vietnamese-language educational booklets and 8000 special calendars with hepatitis B information at Vietnamese Buddhist temples, churches, community festivals, physicians' offices, housing complexes, and supermarkets. A telephone hotline staffed by the Vietnamese- American Community Health Network at Research Development Institute answered questions about hepatitis B, immunizations, and other health topics. *Dallas*: The coalition members conducted outreach to doctors' offices, clinics, churches, temples, schools, day-care centers, Special Supplemental Nutrition Program for Women, Infants and		seroprotected were $317 and $328 for media intervention, and $427 and $424 for community mobilization, respectively • ICER (for CUA, CEA): NR • B:C ratio (for CBA): In the base-case analysis (60% rate of infection and 3% discount rate), years of life saved by media intervention were 131 and by community mobilization were 60; the intervention cost per discounted year of life saved was $9,954 for the media intervention and $11,759 for the community mobilization. The net saving was $1336,667 by the media intervention and $588,184 by the	intervention to boost the very low hepatitis B vaccination coverage among Vietnamese-American children and adolescents

		Children sites, Aid to Families With Dependent Children sites, service organizations, other Vietnamese-American community-based organizations, and public housing blocks with large proportions of Vietnamese-American residents • When/where: Research Development Institute in Houston and the East Dallas Counselling Center • How often: NR • How long for: NR **Comparator:** See above **Sample sizes:** • Total N= 14349 • Intervention N=8692 (media) • Control N= 5657 (community mobilization) **Type of community engagement intervention:** Collaboration between health and other statutory services and communities		community mobilization. Benefit-cost ratio was 5.26 for the media intervention and 4.47 for the community mobilization • Separate B and C for each consequence of CCA: NA • Other measures to be confirmed with NICE for each topic: The number of children receiving any dose increased by 865 (from 1953 [22.5%] to 2818 [32.4%]) in the media intervention (Houston) area and 437 (from 1181 [20.9%] to 1618 [28.6%]) in the community mobilization (Dallas) are. During the intervention, it is estimated that 3116 doses of HepB were administered to	

				children born 1984–1993 in the media (Houston) area and 1243 doses in the community mobilization (Dallas) Area **Secondary analysis:** Sensitivity analysis of 3% and 5% **Attrition details:** NR **Main results/conclusion:** The number of children who completed the series of 3 hepatitis B vaccine doses increased by 1176 at a total cost of $313,904 for media intervention, and by 390 and at $169,561 for community mobilization. Costs per child receiving any dose, per dose, and per completed series were $363, $101, and $267 for media intervention and $387, $136, and $434 for community mobilization,	

				respectively. For media intervention, the intervention cost per discounted year of life saved was $9,954 and 131 years of life were saved; for community mobilization, estimates were $11,759 and 60 years of life. Although the increases in the number of children who completed series of 3 doses were modest for both the Houston and Dallas areas, both media education and, to a lesser degree, community mobilization interventions proved cost-effective and cost-beneficial	

Please complete for all headings and note where data is 'Not reported' or 'Not applicable'.

7.2. Appendix B. Quality Assessment tables for the 22 studies[26]

Study identification Include author, title, reference, year of publication	Andersen et al. 2002		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR/MD		

Section 1: Applicability (relevance to specific review questions and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	Yes/ partly/ no/ unclear/ not applicable	Comments
1.1 Is the study population appropriate for the topic being evaluated?	Yes	
1.2 Are the interventions appropriate for the topic being evaluated?	Yes	
1.3 Is the system in which the study was conducted sufficiently similar to the current UK context?	Partly	US
1.4 Was/were the perspective(s) clearly stated and what were they?	Yes	Societal perspective
1.5 Are all direct health effects on individuals included, and are all other effects included where they are material?	No	
1.6 Are all future costs and outcomes discounted appropriately?	No	Mentioned but not reported
1.7 Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No	Life years saved
1.8 Are costs and outcomes from other sectors fully and appropriately measured and valued?	Partial	
1.9 Overall judgement: directly applicable/partially applicable/not applicable There is no need to use section 2 of the checklist if the study is considered 'not applicable'.		
Partially applicable		
Comments: NA		

Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the guideline	Yes/ partly/ no/ unclear/ not applicable	Comments
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	NA	No model
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	No	Three years do not seem enough for this type of interventions

[26] The quality assessment tools has been developed as per Appendix I 'Quality appraisal checklist – economic evaluations' in the *Methods for development of NICE public health guidance* (2012).

2.3 Are all important and relevant outcomes included?	No	Authors do not report number of years saved due to this intervention
2.4 Are the estimates of baseline outcomes from the best available source?	Yes	
2.5 Are the estimates of relative 'treatment' effects from the best available source?	Partly	Follow up interviews with a random sample of women but not clear how they were randomised
2.6 Are all important and relevant costs included?	Yes	
2.7 Are the estimates of resource use from the best available source?	Yes	
2.8 Are the unit costs of resources from the best available source?	Yes	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	Partly	Authors do not report how they have calculated incremental cost per year of life saved but cost per additional life year is presented
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	No	
2.11 Is there any potential conflict of interest?	No	
2.12 **Overall assessment:** minor limitations/potentially serious limitations/very serious limitations		
Potentially serious limitations		
Other comments: NA		

Study identification Include author, title, reference, year of publication	Barnet et al. 2002		
Guidance topic	Community engagement	**Question No.**	
Checklist completed by	MD		
	Yes/Partly/No/Unclear/NA	**Comments**	
1 Is there a well-defined question?	Yes		
2 Is there a comprehensive description of alternatives?	Partly	Alternative to intervention is usual services but it they are not described at all	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?	Yes	Usual services	
4 Is the perspective stated?	No		
5 Who determined the set of outcomes that were collected to act as consequences?	Authors		
6 Are all important and relevant costs and outcomes for each alternative identified?	Partly		

7 Has effectiveness been established in each of the dimensions under consideration?	Yes	
8 Are outcomes in each dimension and costs measured accurately?	Partly	
9 Are outcomes in each dimension and costs valued credibly?	Partly	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used	No	Only costs per year for the volunteer ($200) and average cost per teenager for about 1.5 years of service ($3,704-$5,245) have been reported
11 Are all costs and outcomes adjusted for differential timing?	No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	No	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	No	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	No	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	Unclear	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Partly	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		

Potentially serious limitations
Other comments: NA

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Borgia et al. 2005	
Guidance topic	Community Engagement	**Question No.**
Checklist completed by	KR/MD	

	Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?	Yes	
2 Is there a comprehensive description of alternatives?	Yes	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?	Yes	
4 Is the perspective stated?	No	NR
5 Who determined the set of outcomes that were collected to act as consequences?	Authors	
6 Are all important and relevant costs and outcomes for each alternative identified?	Partly	They only give approximate total costs.
7 Has effectiveness been established in each of the dimensions under consideration?	No	
8 Are outcomes in each dimension and costs measured accurately?	Unclear	It is not clear how they costed the intervention and comparator
9 Are outcomes in each dimension and costs valued credibly?	Unclear	No calculation is presented
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used	Partly	They only give approximate total costs.
11 Are all costs and outcomes adjusted for	No	NR

differential timing?		
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	NR
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	NR
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	NR
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	No	NR
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	No	NR
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	No	NR
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	NR
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	Yes	Assumptions with regards to sample characteristics of students were made
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	NR
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Yes Yes	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious Limitations		
Very serious limitations		
Other comments:		

Study identification Include author, title, reference, year of publication	Brown et al. 2002		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	MD		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		Yes	Alternative is a waiting list of one year to receive intervention. In the meantime, control group receives usual care
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		Yes	
4 Is the perspective stated?		No	
5 Who determined the set of outcomes that were collected to act as consequences?		Authors	
6 Are all important and relevant costs and outcomes for each alternative identified?		Partly	
7 Has effectiveness been established in each of the dimensions under consideration?		Yes	
8 Are outcomes in each dimension and costs measured accurately?		Partly	
9 Are outcomes in each dimension and costs valued credibly?		Yes	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used		Partly	Costs: $384 per person – intervention group (based on the scenario that a nurse, a dietician, and a community worker all attended sessions 1–12; a nurse or a dietician and a community worker attended sessions 13–26. Authors assume educational materials would be a one-time purchase at the outset of the project, free community- based sites are available and costs for monitoring supplies are covered by third party reimbursement. Overhead charges that would be added to patient costs by organizations that might offer such an intervention are not included

11 Are all costs and outcomes adjusted for differential timing?	No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	No	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	No	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	No	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	Unclear	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Partly	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

Study identification Include author, title, reference, year of publication	Brown et al. 2005		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	MD		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		Yes	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		Yes	
4 Is the perspective stated?		No	
5 Who determined the set of outcomes that were collected to act as consequences?		Authors	
6 Are all important and relevant costs and outcomes for each alternative identified?		Yes	
7 Has effectiveness been established in each of the dimensions under consideration?		Yes	
8 Are outcomes in each dimension and costs measured accurately?		Yes	
9 Are outcomes in each dimension and costs valued credibly?		Yes	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used		Partly	Costs of two interventions were estimated based on the following assumptions: 1) Monitors and strips are covered by insurance 2) Educational materials are a one-time purchase at the outset of the project 3) Free community-based sites are available
11 Are all costs and outcomes adjusted for differential timing?		No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?		No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?		No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?		No	
15 Were there any theoretical relationships between consequences that could have been taken		No	

into account in determining weights?		
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	No	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	No	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	Unclear	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Partly	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

Study identification Include author, title, reference, year of publication	Campbell et al. 2008		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		Yes	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		No	
4 Is the perspective stated?		No	
5 Who determined the set of outcomes that were		Authors	Primary study

collected to act as consequences?		
6 Are all important and relevant costs and outcomes for each alternative identified?	Partly	Overall costs (including travel) was presented, but not all relevant costs. Also, outcomes measure in terms of smoking prevalence only
7 Has effectiveness been established in each of the dimensions under consideration?	Yes	
8 Are outcomes in each dimension and costs measured accurately?	Unclear	
9 Are outcomes in each dimension and costs valued credibly?	Unclear	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used	Unclear	
11 Are all costs and outcomes adjusted for differential timing?	No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?	Unclear	Authors assumed that 30% of students would be in the group at high risk of smoking uptake
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	NA	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	NA	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	NA	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	NA	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	Partly	Not justified. Authors assumed that 30% of students would be in the group at high risk of smoking uptake
20 Were sensitivity analyses conducted to	No	

investigate uncertainty in estimates of cost or benefits?		
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Yes	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Ell et al. 2002	
Guidance topic	Community Engagement	**Question No.**
Checklist completed by	KR	
	Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?	Yes	
2 Is there a comprehensive description of alternatives?	Partly	Usual care is not described
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?	No	
4 Is the perspective stated?	No	
5 Who determined the set of outcomes that were collected to act as consequences?	Authors	
6 Are all important and relevant costs and outcomes for each alternative identified?	Partly	Only average cost per enrolee is reported

7 Has effectiveness been established in each of the dimensions under consideration?	Yes	
8 Are outcomes in each dimension and costs measured accurately?	Unclear	
9 Are outcomes in each dimension and costs valued credibly?	Unclear	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used	Partly	Only one outcome is measured and cost are not for each corresponding alternative
11 Are all costs and outcomes adjusted for differential timing?	No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	No	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	Unclear	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	Unclear	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	NA	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences.	Partly	US study

• Question of interest differs from the CCA question being reviewed.		
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Frick et al. 2004		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
Section 1: Applicability (relevance to specific review questions and the NICE reference case as described in section 7.5) This checklist should be used first to filter out irrelevant studies.	Yes/partly/no/unclear/NA	Comments	
1.1 Is the study population appropriate for the review question?	Yes		
1.2 Are the interventions appropriate for the review question?	Partly	The intervention is designed for the local area	
1.3 Is the social care system in which the study was conducted sufficiently similar to the current UK social care context?	Partly	US	
1.4 Are the perspectives clearly stated and what are they?	Partly	Medicare and Medicaid	
1.5 Are all direct effects on individuals included, and are all other effects included where they are material?	Yes		
1.6 Are all future costs and outcomes	Partly	Only costs are	

discounted appropriately?		discounted by 3%
1.7 Is QALY used as an outcome? If not, describe rationale and outcomes used in line with analytical perspectives taken (item 1.4 above).	Yes	
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	Yes	
1.9 Overall judgement: Directly applicable/partially applicable/not applicable There is no need to use section 2 of the checklist if the study is considered 'not applicable'.		
Other comments: Partly applicable		
Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the guideline	Yes/partly/no/unclear/NA	Comments
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	Unclear	Model is not presented
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Unclear	
2.3 Are all important and relevant outcomes included?	Unclear	
2.4 Are the estimates of baseline outcomes from the best available source?	Unclear	
2.5 Are the estimates of relative intervention effects from the best available source?	Yes	
2.6 Are all important and relevant costs included?	Yes	
2.7 Are the estimates of resource use from the best available source?	Yes	
2.8 Are the unit costs of resources from the best available source?	Yes	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	Yes	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	Yes	
2.11 Is there any potential conflict of interest?	No	
2.12 Overall assessment: Minor limitations/potentially serious limitations/very serious limitations		
Minor limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Fried et al. 2008	
Guidance topic	Community Engagement	**Question No.**
Checklist completed by	KR	

Section 1: Applicability (relevance to specific review questions and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	Yes/ partly/ no/ unclear/ not applicable	Comments
1.1 Is the study population appropriate for the topic being evaluated?	Yes	
1.2 Are the interventions appropriate for the topic being evaluated?	Yes	
1.3 Is the system in which the study was conducted sufficiently similar to the current UK context?	Partly	USA
1.4 Was/were the perspective(s) clearly stated and what were they?	No	
1.5 Are all direct health effects on individuals included, and are all other effects included where they are material?	Yes	
1.6 Are all future costs and outcomes discounted appropriately?	No	
1.7 Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No	
1.8 Are costs and outcomes from other sectors fully and appropriately measured and valued?	Unclear	
1.9 Overall judgement: directly applicable/partially applicable/not applicable There is no need to use section 2 of the checklist if the study is considered 'not applicable'.		
Not applicable		

Comments: This study does not provide any costs of intervention. This is not an economic study; this study is measuring the effect of the intervention on volunteers		
Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the guideline	Yes/ partly/ no/ unclear/ not applicable	Comments
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?		
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?		
2.3 Are all important and relevant outcomes included?		
2.4 Are the estimates of baseline outcomes from the best available source?		
2.5 Are the estimates of relative 'treatment' effects from the best available source?		
2.6 Are all important and relevant costs included?		
2.7 Are the estimates of resource use from the best available source?		
2.8 Are the unit costs of resources from the best available source?		
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?		
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?		
2.11 Is there any potential conflict of interest?		
2.12 Overall assessment: minor limitations/potentially serious limitations/very serious limitations		
Other comments:		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Krieger et. al 2002		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		Yes	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		Yes	
4 Is the perspective stated? • Is WTP the public-sector WTP or the aggregated individual WTP? Has the WTP been recalibrated when the basis for its calculation has not coincided with the perspective being used?		No	Economic perspective is Medicaid
5 Are all important and relevant costs and outcomes for each alternative identified? • Check to see if the study is of money-costs and 'benefits' which are savings of future money-costs?		Yes	Costs are reported and benefits are measured in terms of quality of life, hospital days avoided
6 Has effectiveness been established?		Yes	Quality of life score
7 Are costs and outcomes measured accurately?		Yes	
8 Are costs and outcomes valued credibly?		Yes	
9 Have all important and relevant costs and outcomes for each alternative been quantified in money terms? • If not, state which items were not quantified, and the likely extent of their importance in terms of influencing the benefit: cost ratio.		Partly	Cost benefit ratio is not reported
10 Are costs and outcomes adjusted for differential timing?		No	
11 Has at least one of Net Present Value, B:C ratio and payback period been estimated?		No	
12 Were any assumptions of materiality made?		No	
13 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?		NA	

14 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
15 How far do study results include all issues of concern to users?	Uclear	
16 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CBA question being reviewed.	Yes	
17 Have equity considerations been addressed in any way?	No	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Kumpusalo et al. 1996		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		No	Control is not described
3 Was one of the alternatives designated as the comparator against which the intervention was		No	Usual care

evaluated?		
4 Is the perspective stated?	No	
5 Who determined the set of outcomes that were collected to act as consequences?	Authors	
6 Are all important and relevant costs and outcomes for each alternative identified?	Yes	
7 Has effectiveness been established in each of the dimensions under consideration?	Unclear	
8 Are outcomes in each dimension and costs measured accurately?	Unclear	
9 Are outcomes in each dimension and costs valued credibly?	Unclear	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used	Partly	
11 Are all costs and outcomes adjusted for differential timing?	No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	NA	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	Unclear	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	No	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	NA	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or	No	

benefits?		
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Yes	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Lindqvist et al. 2001		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		No	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		Unclear	

4 Is the perspective stated? • Is WTP the public-sector WTP or the aggregated individual WTP? Has the WTP been recalibrated when the basis for its calculation has not coincided with the perspective being used?	Partly	Authors state costs in a societal perspective, but they do not report WTP
5 Are all important and relevant costs and outcomes for each alternative identified? • Check to see if the study is of money-costs and 'benefits' which are savings of future money-costs?	Yes	
6 Has effectiveness been established?	Yes	
7 Are costs and outcomes measured accurately?	Unclear	
8 Are costs and outcomes valued credibly?	Unclear	
9 Have all important and relevant costs and outcomes for each alternative been quantified in money terms? • If not, state which items were not quantified, and the likely extent of their importance in terms of influencing the benefit: cost ratio.	Unclear	
10 Are costs and outcomes adjusted for differential timing?	No	
11 Has at least one of Net Present Value, B:C ratio and payback period been estimated?	Unclear	
12 Were any assumptions of materiality made?	No	
13 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	Unclear	
14 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
15 How far do study results include all issues of concern to users?	Unclear	
16 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CBA question being reviewed.	Yes	
17 Have equity considerations been addressed in any way?	Unclear	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Long et al. 1995		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		Yes	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		No	
4 Is the perspective stated?		Unclear	Cost were presented for the WIC programme
5 Who determined the set of outcomes that were collected to act as consequences?		Authors	
6 Are all important and relevant costs and outcomes for each alternative identified?		No	Only cost for peer counsellor is presented
7 Has effectiveness been established in each of the dimensions under consideration?		Unclear	
8 Are outcomes in each dimension and costs measured accurately?		Unclear	Cost measurement is not described
9 Are outcomes in each dimension and costs valued credibly?		Unclear	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used		NA	
11 Are all costs and outcomes adjusted for		No	

differential timing?		
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	No	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	No	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	NA	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	NA	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
21 How far do study results include all issues of concern to users?	3 months	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Unclear	Native American population
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study

complies with the criterion

- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	McIntosh et al. 2009		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
Section 1: Applicability (relevance to specific review questions and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	Yes/ partly/ no/ unclear/ not applicable	Comments	
1.1 Is the study population appropriate for the topic being evaluated?	Yes		
1.2 Are the interventions appropriate for the topic being evaluated?	Yes		
1.3 Is the system in which the study was conducted sufficiently similar to the current UK context?	Yes		
1.4 Was/were the perspective(s) clearly stated and what were they?	Yes	Societal perspective	
1.5 Are all direct health effects on individuals included, and are all other effects included where they are material?	Unclear		
1.6 Are all future costs and outcomes discounted appropriately?	Yes		
1.7 Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No		
1.8 Are costs and outcomes from other sectors fully and appropriately measured and valued?	Unclear		
1.9 Overall judgement: directly applicable/partially applicable/not applicable There is no need to use section 2 of the checklist if the study is considered 'not applicable'.			
Partially applicable			
Comments: NA			
Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable	Yes/ partly/ no/ unclear/ not applicable	Comments	

to the context of the guideline		
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	Unclear	Model is not presented
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Yes	
2.3 Are all important and relevant outcomes included?	Yes	
2.4 Are the estimates of baseline outcomes from the best available source?	Unclear	
2.5 Are the estimates of relative 'treatment' effects from the best available source?	Unclear	
2.6 Are all important and relevant costs included?	Yes	
2.7 Are the estimates of resource use from the best available source?	Unclear	
2.8 Are the unit costs of resources from the best available source?	Yes	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	Yes	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	Unclear	
2.11 Is there any potential conflict of interest?	No	
2.12 Overall assessment: minor limitations/potentially serious limitations/very serious limitations		
Minor limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Office of the Deputy Prime Minster, 2004

Guidance topic	Community Engagement	Question No.	
Checklist completed by	KR		
		Yes/Partly/No/Unclear/NA	Comments
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		No	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		No	
4 Is the perspective stated? • Is WTP the public-sector WTP or the aggregated individual WTP? Has the WTP been recalibrated when the basis for its calculation has not coincided with the perspective being used?		No	The paper is a government report
5 Are all important and relevant costs and outcomes for each alternative identified? • Check to see if the study is of money-costs and 'benefits' which are savings of future money-costs?		Partly	Total intervention cost
6 Has effectiveness been established?		Yes	
7 Are costs and outcomes measured accurately?		Unclear	
8 Are costs and outcomes valued credibly?		Unclear	
9 Have all important and relevant costs and outcomes for each alternative been quantified in money terms? • If not, state which items were not quantified, and the likely extent of their importance in terms of influencing the benefit: cost ratio.		Yes	
10 Are costs and outcomes adjusted for differential timing?		No	
11 Has at least one of Net Present Value, B:C ratio and payback period been estimated?		Yes	
12 Were any assumptions of materiality made?		No	
13 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?		NA	
14 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?		Yes	10%
15 How far do study results include all issues of concern to users?		Unclear	
16 Are the results generalisable to the setting of interest in the review? • Country differences.		Yes	

• Question of interest differs from the CBA question being reviewed.		
17 Have equity considerations been addressed in any way?	No	
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Paskett et al. 2006	
Guidance topic	Community Engagement	**Question No.**
Checklist completed by	KR	
	Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?	Yes	
2 Is there a comprehensive description of alternatives?	Yes	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?	Yes	
4 Is the perspective stated?	Yes	
5 Who determined the set of outcomes that were collected to act as consequences?	Authors	

6 Are all important and relevant costs and outcomes for each alternative identified?	Partly	Only cost of intervention and cost of mammogram is presented
7 Has effectiveness been established in each of the dimensions under consideration?	Unclear	
8 Are outcomes in each dimension and costs measured accurately?	Unclear	
9 Are outcomes in each dimension and costs valued credibly?	Unclear	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used	No	
11 Are all costs and outcomes adjusted for differential timing?	No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	NA	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	No	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	Unclear	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	NA	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of	Partly	US study

interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.		
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Pinkerton et al. 1998		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
Section 1: Applicability (relevance to specific review questions and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	Yes/ partly/ no/ unclear/ not applicable	Comments	
1.1 Is the study population appropriate for the topic being evaluated?	Yes		
1.2 Are the interventions appropriate for the topic being evaluated?	Yes		
1.3 Is the system in which the study was conducted sufficiently similar to the current UK context?	Partly	USA	
1.4 Was/were the perspective(s) clearly stated	Yes	Societal perspective	

and what were they?		
1.5 Are all direct health effects on individuals included, and are all other effects included where they are material?	Unclear	Number of infections averted and QALYs gained
1.6 Are all future costs and outcomes discounted appropriately?	Yes	
1.7 Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	Yes	
1.8 Are costs and outcomes from other sectors fully and appropriately measured and valued?	Unclear	
1.9 Overall judgement: directly applicable/partially applicable/not applicable There is no need to use section 2 of the checklist if the study is considered 'not applicable'.		
Partially applicable		
Comments: NA		
Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the guideline	Yes/ partly/ no/ unclear/ not applicable	Comments
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	NA	Model is not presented
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Unclear	3 months
2.3 Are all important and relevant outcomes included?	Unclear	
2.4 Are the estimates of baseline outcomes from the best available source?	Yes	Consumer price index
2.5 Are the estimates of relative 'treatment' effects from the best available source?	NA	
2.6 Are all important and relevant costs included?	Unclear	
2.7 Are the estimates of resource use from the best available source?	Yes	
2.8 Are the unit costs of resources from the best available source?	Yes	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	Yes	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	Yes	
2.11 Is there any potential conflict of interest?	No	
2.12 Overall assessment: minor limitations/potentially serious limitations/very serious limitations		

Minor limitations
Other comments: NA

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Pugh et al. 2002		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		Yes	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		No	
4 Is the perspective stated?		No	
5 Who determined the set of outcomes that were collected to act as consequences?		Authors	
6 Are all important and relevant costs and outcomes for each alternative identified?		Yes	
7 Has effectiveness been established in each of the dimensions under consideration?		NA	

8 Are outcomes in each dimension and costs measured accurately?	Unclear	
9 Are outcomes in each dimension and costs valued credibly?	Unclear	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used	Unclear	
11 Are all costs and outcomes adjusted for differential timing?	No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	No	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	NA	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	NA	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	NA	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Partly	US study

Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations
Potentially serious limitations
Other comments: NA

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Reijneveld et al. 2003		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
		Yes/Partly/No/Unclear/NA	**Comments**
1 Is there a well-defined question?		Yes	
2 Is there a comprehensive description of alternatives?		Yes	
3 Was one of the alternatives designated as the comparator against which the intervention was evaluated?		No	
4 Is the perspective stated?		No	
5 Who determined the set of outcomes that were collected to act as consequences?		Authors	
6 Are all important and relevant costs and outcomes for each alternative identified?		Yes	
7 Has effectiveness been established in each of the dimensions under consideration?		Yes	
8 Are outcomes in each dimension and costs measured accurately?		Unclear	

9 Are outcomes in each dimension and costs valued credibly?	Unclear	
10 Have all important and relevant outcomes in each dimension and costs for each corresponding alternative been quantified? • If not, state which items were not quantified. • Were they still used in the CCA and how were they used	Unclear	
11 Are all costs and outcomes adjusted for differential timing?	No	
12 Were any assumptions of materiality made to restrict the number of consequences considered?	No	
13 Was any analysis of correlation between consequences carried out to help control for double counting?	No	
14 Was there any indication of the relative importance of the different consequences by a suggested weighting of them? Was the weighting scheme a validated one?	No	
15 Were there any theoretical relationships between consequences that could have been taken into account in determining weights?	No	
16 Were the consequences considered one by one to see if a decision could be made based on a single consequence?	Unclear	
17 Were the consequences considered in subgroups of all the consequences in the analysis to see if a decision could be made based on a particular subgroup of consequences?	Unclear	
18 Was an MCDA or other published method of aggregation of consequences attempted?	No	
19 Were all assumptions reasonable in the circumstances in which they were made, and were they justified?	NA	
20 Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or benefits?	No	
21 How far do study results include all issues of concern to users?	Unclear	
22 Are the results generalisable to the setting of interest in the review? • Country differences. • Question of interest differs from the CCA question being reviewed.	Partly	The Dutch study
Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations		
Potentially serious limitations		

Other comments: NA

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Richardson et al. 2008		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		
Section 1: Applicability (relevance to specific review questions and the NICE reference case as described in section 7.5) This checklist should be used first to filter out irrelevant studies.	Yes/partly/no/unclear/NA	Comments	
1.1 Is the study population appropriate for the review question?	Yes		
1.2 Are the interventions appropriate for the review question?	Yes		
1.3 Is the social care system in which the study was conducted sufficiently similar to the current UK social care context?	Yes		
1.4 Are the perspectives clearly stated and what are they?	Yes		
1.5 Are all direct effects on individuals included, and are all other effects included where they are material?	Yes		
1.6 Are all future costs and outcomes	NA	All costs and	

discounted appropriately?		outcomes fell within a 6-month period and therefore discounting was not appropriate
1.7 Is QALY used as an outcome? If not, describe rationale and outcomes used in line with analytical perspectives taken (item 1.4 above).	Yes	
1.8 Are costs and outcomes from other sectors (including the value of unpaid care, where relevant) fully and appropriately measured and valued?	Yes	
1.9 Overall judgement: Directly applicable/partially applicable/not applicable There is no need to use section 2 of the checklist if the study is considered 'not applicable'.		
Other comments: Directly applicable		
Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the guideline	Yes/partly/no/unclear/NA	Comments
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	Unclear	Model is not presented
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Unclear	
2.3 Are all important and relevant outcomes included?	Yes	
2.4 Are the estimates of baseline outcomes from the best available source?	Yes	
2.5 Are the estimates of relative intervention effects from the best available source?	Yes	
2.6 Are all important and relevant costs included?	Yes	
2.7 Are the estimates of resource use from the best available source?	Yes	
2.8 Are the unit costs of resources from the best available source?	Yes	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	Yes	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	Yes	
2.11 Is there any potential conflict of interest?	No	
2.12 Overall assessment: Minor limitations/potentially serious limitations/very serious limitations		

Minor limitations
Other comments: NA

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

Study identification Include author, title, reference, year of publication	Secker-Walker 2005		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR/MD		
Section 1: Applicability (relevance to specific review questions and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	Yes/ partly/ no/ unclear/ not applicable	Comments	
1.1 Is the study population appropriate for the topic being evaluated?	Yes		
1.2 Are the interventions appropriate for the topic being evaluated?	Yes		
1.3 Is the system in which the study was conducted sufficiently similar to the current UK context?	Partly	US	
1.4 Was/were the perspective(s) clearly stated and what were they?	Yes	National Institutes of Health (NIH)	
1.5 Are all direct health effects on individuals included, and are all other effects included where they are material?	No		
1.6 Are all future costs and outcomes discounted appropriately?	Yes	3% and 5%	
1.7 Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No	Life years saved	

1.8 Are costs and outcomes from other sectors fully and appropriately measured and valued?	Partly	
1.9 **Overall judgement:** directly applicable/partially applicable/not applicable There is no need to use section 2 of the checklist if the study is considered 'not applicable'.		
Partially applicable		
Comments: NA		
Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the guideline	Yes/ partly/ no/ unclear/ not applicable	Comments
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	NA	Model is not presented
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Yes	
2.3 Are all important and relevant outcomes included?	Partly	In this paper authors only report Life years saved. Other outcomes may be reported elsewhere.
2.4 Are the estimates of baseline outcomes from the best available source?	No	Intervention assessed by telephone survey at baseline and 5 years post-intervention
2.5 Are the estimates of relative 'treatment' effects from the best available source?	N/A	
2.6 Are all important and relevant costs included?	Partly	Only intervention and direct costs are included
2.7 Are the estimates of resource use from the best available source?	Unclear	
2.8 Are the unit costs of resources from the best available source?	Unclear	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	No	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	Yes	
2.11 Is there any potential conflict of interest?	No	
2.12 **Overall assessment:** minor limitations/potentially serious limitations/very serious limitations		
Potentially serious limitations		
Other comments: NA		

Study identification Include author, title, reference, year of publication	Zhou et al. 2003		
Guidance topic	Community Engagement	**Question No.**	
Checklist completed by	KR		

Section 1: Applicability (relevance to specific review questions and the NICE reference case) This checklist should be used first to filter out irrelevant studies.	Yes/ partly/ no/ unclear/ not applicable	Comments
1.1 Is the study population appropriate for the topic being evaluated?	Yes	
1.2 Are the interventions appropriate for the topic being evaluated?	Yes	
1.3 Is the system in which the study was conducted sufficiently similar to the current UK context?	Partly	USA
1.4 Was/were the perspective(s) clearly stated and what were they?	No	
1.5 Are all direct health effects on individuals included, and are all other effects included where they are material?	No	Impact of interventions (e.g. media) on the rest of the population
1.6 Are all future costs and outcomes discounted appropriately?	Yes	
1.7 Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)?	No	
1.8 Are costs and outcomes from other sectors fully and appropriately measured and valued?	Unclear	
1.9 Overall judgement: directly applicable/partially applicable/not applicable There is no need to use section 2 of the checklist if the study is considered 'not applicable'.		
Partially applicable		
Comments: NA		

Section 2: Study limitations (the level of methodological quality) This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the guideline	Yes/ partly/ no/ unclear/ not applicable	Comments
2.1 Does the model structure adequately reflect the nature of the topic under evaluation?	NA	Model is not presented
2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes?	Yes	
2.3 Are all important and relevant outcomes included?	No	Impact of interventions on the rest of the population

2.4 Are the estimates of baseline outcomes from the best available source?	Unclear	
2.5 Are the estimates of relative 'treatment' effects from the best available source?	Unclear	
2.6 Are all important and relevant costs included?	Yes	
2.7 Are the estimates of resource use from the best available source?	Unclear	
2.8 Are the unit costs of resources from the best available source?	Unclear	
2.9 Is an appropriate incremental analysis presented or can it be calculated from the data?	Yes	
2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis?	Yes	
2.11 Is there any potential conflict of interest?	No	
2.12 Overall assessment: minor limitations/potentially serious limitations/very serious limitations		
Minor limitations		
Other comments: NA		

For all questions:

- answer 'yes' if the study fully meets the criterion
- answer 'partly' if the study largely meets the criterion but differs in some important respect
- answer 'no' if the study deviates substantively from the criterion
- answer 'unclear' if the report provides insufficient information to judge whether the study complies with the criterion
- answer 'NA (not applicable)' if the criterion is not relevant in a particular instance.

For 'partly' or 'no' responses, use the comments column to explain how the study deviates from the criterion.

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