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Collaboration between local health and local government agencies for health improvement (Review)

Hayes SL, Mann MK, Morgan FM, Kelly MJ, Weightman AL



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[Intervention Review]

Collaboration between local health and local government agencies for health improvement

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ABSTRACT

Background

In many countries, national, regional and local inter- and intra-agency collaborations have been introduced to improve health outcomes. Evidence is needed on the effectiveness of locally developed partnerships which target changes in health outcomes and behaviours.

Objectives

To evaluate the effects of interagency collaboration between local health and local government agencies on health outcomes in any population or age group.

Search methods

We searched the Cochrane Public Health Group Specialised Register, AMED, ASSIA, CENTRAL, CINAHL, DoPHER, EMBASE, ERIC, HMIC, IBSS, MEDLINE, MEDLINE In-Process, OpenGrey, PsycINFO, Rehabdata, Social Care Online, Social Services Abstracts, Sociological Abstracts, TRoPHI and Web of Science from 1966 through to January 2012. 'Snowballing' methods were used, including expert contact, citation tracking, website searching and reference list follow-up.

Selection criteria

Randomized controlled trials (RCTs), controlled clinical trials (CCTs), controlled before-and-after studies (CBAs) and interrupted time series (ITS) where the study reported individual health outcomes arising from interagency collaboration between health and local government agencies compared to standard care. Studies were selected independently in duplicate, with no restriction on population subgroup or disease.

Data collection and analysis

Two authors independently conducted data extraction and assessed risk of bias for each study.

Main results

Sixteen studies were identified (28,212 participants). Only two were considered to be at low risk of bias. Eleven studies contributed data to the meta-analyses but a narrative synthesis was undertaken for all 16 studies. Six studies examined mental health initiatives, of which one showed health benefit, four showed modest improvement in one or more of the outcomes measured but no clear overall health gain, and one showed no evidence of health gain. Four studies considered lifestyle improvements, of which one showed some limited short-term improvements, two failed to show health gains for the intervention population, and one showed more unhealthy lifestyle behaviours persisting in the intervention population. Three studies considered chronic disease management and all failed to demonstrate health gains. Three studies considered environmental improvements and adjustments, of which two showed some health improvements and one did not.

Meta-analysis of three studies exploring the effect of collaboration on mortality showed no effect (pooled relative risk of 1.04 in favour of control, 95% CI 0.92 to 1.17). Analysis of five studies (with high heterogeneity) looking at the effect of collaboration on mental health resulted in a standardised mean difference of -0.28, a small effect favouring the intervention (95% CI -0.51 to -0.06). From two studies, there was a statistically significant but clinically modest improvement in the global assessment of function symptoms score scale, with a pooled mean difference (on a scale of 1 to 100) of -2.63 favouring the intervention (95% CI -5.16 to -0.10).

For physical health (6 studies) and quality of life (4 studies) the results were not statistically significant, the standardised mean differences were -0.01 (95% CI -0.10 to 0.07) and -0.08 (95% CI -0.44 to 0.27), respectively.

Authors' conclusions

Collaboration between local health and local government is commonly considered best practice. However, the review did not identify any reliable evidence that interagency collaboration, compared to standard services, necessarily leads to health improvement. A few studies identified component benefits but these were not reflected in overall outcome scores and could have resulted from the use of significant additional resources. Although agencies appear enthusiastic about collaboration, difficulties in the primary studies and incomplete implementation of initiatives have prevented the development of a strong evidence base. If these weaknesses are addressed in future studies (for example by providing greater detail on the implementation of programmes; using more robust designs, integrated process evaluations to show how well the partners of the collaboration worked together, and measurement of health outcomes) it could provide a better understanding of what might work and why. It is possible that local collaborative partnerships delivering environmental Interventions may result in health gain but the evidence base for this is very limited.

Evaluations of interagency collaborative arrangements face many challenges. The results demonstrate that collaborative community partnerships can be established to deliver interventions but it is important to agree goals, methods of working, monitoring and evaluation before implementation to protect programme fidelity and increase the potential for effectiveness.

PLAIN LANGUAGE SUMMARY

Collaboration between local health and local government agencies for health improvement

Since the 1980s, national and international health organisations have promoted partnerships between health and other public services at a local level to improve the health of the population. This review looked for evidence on whether collaboration does or does not work when compared to standard services.

Of the two good quality studies identified, one showed no evidence that collaboration between local services improved health and the other showed a modest improvement in some areas. Of the remaining studies, where health benefits were reported these were often modest, inconsistent with other findings and could have been the result of additional funding or resources. Two out of three studies looking at environmental changes reported some health benefits.

These findings show that when comparing local collaborative partnerships between health and government agencies with standard working arrangements, there is generally no difference in health outcomes.

SUMMARY OF FINDINGS FOR THE MAIN COMPARISON *[Explanation]*

Interventions for health improvement in all populations						
Outcomes	Intervention and Comparison intervention	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Comments
		Assumed risk	Corresponding risk			
		With comparator	With intervention			
Mortality						
	Mortality/health improvement	Study population 347 per 1000 352 per 1000		RR 1.04 (0.92 to 1.17)	1994 (3)	
Mental Health						
	Morbidity/health improvement	The mean mental health score in the intervention groups was 0.28 standard deviations lower , a small effect favouring intervention (95% CI: 0.52 to 0.04 lower).			12060 (5)	Standard Mean Difference -0.28 (-0.52 to -0.04)
Physical Health						
	Morbidity/health improvement	The mean physical health score in the intervention groups was 0.01 standard deviations			11388 (5)	Standard Mean Difference -0.01 (-0.1 to 0.07)

		<p>lower (95% CI: 0.1 lower to 0.07 higher).</p>		
Quality of Life				
	Morbidity/health improvement	<p>The mean quality of life in the intervention groups was 0.08 standard deviations lower (95% CI 0.44 lower to 0.27 higher).</p>	797 (3)	Standard Mean Difference -0.08 (-0.44 to 0.27)
Global Assessment of Function symptoms score				
	Morbidity/health improvement	<p>The mean global assessment of function symptoms score in the intervention groups was 2.63 lower, a small effect favouring intervention (95% CI: 5.16 to 0.1 lower).</p>	600 (2)	

BACKGROUND

The level of health within a given population is affected not only by its health services but also by factors as diverse as environmental, social, cultural and economic influences (Benzeval 1995). These factors are addressed by many publicly funded organisations, including local government and local health authorities. The recognition of the role that social determinants play in the health of the population makes it clear that health cannot be the responsibility of just one agency and, over the last three decades, collaboration has been an increasing focus of health promotion internationally (Marmot 2005).

The need for collaborative working was highlighted in the 1986 Ottawa Charter for Health Promotion, produced during the First International Conference on Health Promotion. The Charter stated that “the prerequisites and prospects for health cannot be ensured by the health sector alone. More importantly, health promotion demands coordinated action by all concerned: by governments, by health and other social and economic sectors, by non-governmental and voluntary organizations, by local authorities, by industry and by the media. People in all walks of life are involved as individuals, families and communities. Professional and social groups and health personnel have a major responsibility to mediate between differing interests in society for the pursuit of health” (WHO 1986).

In 1997 the Jakarta Declaration identified partnerships for health and social development between different sectors as one of its five key priorities. It stressed the need to strengthen existing partnerships and urged the development of new partnerships (Jakarta 1997). These priorities were further highlighted in 2005 when the Bangkok Charter stated that “partnerships, alliances, networks and collaborations provide exciting and rewarding ways of bringing people and organizations together around common goals and joint actions to improve the health of populations” (WHO 2005).

In his report “Fair Society, Healthy Lives” Marmot advised that tackling health inequalities also requires action across the social determinants of health, including education, occupation, employment, income, home and community. He emphasised the key role of local government along with national government departments, the voluntary and private sectors (Marmot 2010).

The World Health Organization (WHO) has documented the success that can be achieved when people, agencies, governments and industry work together to tackle international public health challenges such as smallpox, dehydration, poor mental health, tobacco, AIDS, tuberculosis and outbreaks (WHO 2011). The reports are encouraging but all involved national and international effort. It is not clear if collaborations between local health and local government agencies are equally successful.

In many countries national, regional and local inter- and intra-agency collaborations have been introduced in order to improve

health outcomes; often in disadvantaged groups. Agencies involved include primary and secondary healthcare providers, social services, housing, transport, leisure and library services, education and training departments and a range of voluntary bodies. Currently, there are a number of examples where collaborative programmes have been funded at national or state level but delivered locally through interagency partnerships. The WISEWOMAN Project was developed in the USA to prevent or control cardiovascular and other chronic diseases in low income and under- or uninsured women. The project comprises 15 state-based partnerships across a range of agencies working within existing breast and cervical cancer screening programmes to provide screening and lifestyle interventions (CDC 2007). The Victoria Primary Care Partnerships in Australia have drawn together over 800 agencies in 13 partnerships to improve the efficiency and efficacy of health resources and to improve health and wellbeing (Primary 2004; Primary 2005; Primary 2009).

In the United Kingdom, interdepartmental working has been signalled as the way forward since the reorganisation of health and social services that took place during the 1970s (Great Britain 1970; Great Britain 1972; Great Britain 1973). Despite a split in responsibilities, close collaborative working between local health and local government agencies was identified as essential to improve the standards of services being delivered (Laws Statutes 1973a; Laws Statutes 1973b; Laws Statutes 1974). Collaboration was expected to be wide-ranging, involving the sharing of resources, information, responsibilities and power. Since that time, successive UK governments have created a number of committee and team structures to facilitate partnerships. These have included bodies with statutory functions, such as Joint Commissioning Committees, and others established in accordance with governmental guidance, such as drug and alcohol action teams (Great Britain 1977; Great Britain 1999; HM Government 1995; HM Government 1998). The focus on collaboration has continued with successive governments. For example, the SureStart programme brought together early education, childcare, health and family support with the aim of delivering the best start in life for every child via a mix of universal and targeted programmes for young children and their parents (Sure Start 2004). These bodies address local problems and may have a very different set of priorities from those of their individual partner agencies. The question of whether better health outcomes are achieved as a result of such collaborative arrangements is not clearly answered.

Rationale of the review

In 2000, an unpublished systematic review by the current authors examined the research evidence related to the health effect of collaboration between local health and local government agencies (Wales Office 2001). The review found no evidence that interagency collaborative working necessarily led to improved health. In light of the continued emphasis on local collaborative work-

ing, the authors felt it was appropriate to update the review. As in the original review, the focus is on locally-based initiatives. These could include initiatives arising from a national or state agenda as long as there was local flexibility in how they were developed and implemented. Collaboration at state and national levels often involves coordination of large scale planning and represents a different model of strategic alliances and relationship-building from partnerships configured at the community level (Padgett 2004). Evidence is needed on the effectiveness of locally-developed partnerships which target changes in individual health outcomes and behaviours.

OBJECTIVES

Primary research objective

To critically assess and summarise the effects of interagency collaboration between local health and local government agencies on health outcomes.

Secondary research objectives

1. To document and describe methods and models of collaboration between local health service agencies and local government authorities.
2. To assess the best methods of collaboration for producing measurable health improvement, if any such methods exist.
3. To develop guidance for future research and research methods if insufficient evidence is identified to address the primary research objective.

METHODS

Criteria for considering studies for this review

Types of studies

Included studies were randomized or quasi-randomized controlled trials (RCTs) including cluster RCTs; controlled clinical trials (CCTs); controlled before-and-after studies (CBAs) with a minimum of two study and two control sites; interrupted time series (ITS) with a minimum of three points both before and after the intervention. Studies which were solely economic evaluations were excluded. For included studies, authors were asked for information on partnership or process evaluations related to their collaborative arrangements, and for clarification of study design or missing data as appropriate. Studies or phases of studies where

follow-up rates were less than 60% were excluded. Where studies reported sequential results, they were included up to the point where follow-up fell below 60%.

Types of participants

All population types and all age groups were included.

Types of interventions

Any interventions of interagency collaboration and partnership between statutory health and local government agencies where the level of partnership between collaborators could be clearly determined (for example, who are the partner agencies and what are their roles within the partnership) and where the interventions were aimed at improving health. For each intervention, comparator care was the mainstream care provided in the area and at the time the intervention was being tested (standard care).

Interventions could be delivered by a wide range of partner agencies but needed to include personnel funded or hosted by a local health agency (for example, doctors, nurses, therapists, midwives, health visitors, dieticians, school nurses, clinical psychologists, health promotion practitioners including public health units) and personnel funded or hosted by a local government agency (for example, social workers, teachers, educational psychologists, housing support workers, library and leisure staff, transport staff, environmental health officers). Multi-partner collaborations could include education authorities and health agencies, departments for transportation or housing and health agencies, or a mix of these. Interventions where another organisation, for example a voluntary organisation, had been contracted to act on behalf of one of those agencies were also considered for inclusion.

Collaboration was defined as 'two or more parties that pursue an agreed set of goals and work cooperatively toward a set of shared health outcomes', adapted from that used by Gillies (1998) in describing alliances and partnerships for health promotion. Partnerships for health promotion focus on health outcomes rather than specific health promotion goals (Gillies 1998). Local collaboration was judged to have taken place if there was evidence that the partners had agreed local joint working arrangements and shared objectives.

Studies with the following types of interventions were excluded.

- Studies which evaluated the effect of collaborative training initiatives between, for example, medical and social work undergraduates.
- Studies that included a collaboration designed to enhance one agency's effectiveness in accessing other agencies, as these studies would not be reporting on the outcomes of the collaboration itself but the degree of involvement of the parent agency.
- Studies where local government collaborated with the police, probation and prison services or the church but not with a health agency.

- Studies where health agencies collaborated with the police, probation and prison services or the church but not with a local government agency.

Types of outcome measures

The primary outcomes of interest were limited to those which were either direct measures of improved health, health status, survival; or lifestyle factors where evidence indicates these have an effect on those direct measures. Studies were included where there were data for any measure of the following endpoints, and where a validated tool was used (see [Appendix 1](#)).

1. Mortality e.g., all-cause death within period of study; probability of survival.
2. Morbidity e.g., quality of life measures, incidence rates, measures of symptoms and functionality, birth weight.
3. Behavioural change was included as a lifestyle change measure when it was known to directly affect levels of health risk or provide health protection e.g., measures of physical activity, smoking status and history, alcohol consumption, dietary change. Where studies reported more than one relevant outcome, each was captured and reported in narrative form. Where outcomes were provided at multiple follow-up points, each outcome was reported for the longest available follow-up period where attrition was 40% or less.

Search methods for identification of studies

Electronic searches

The following electronic databases were searched from January 1966 (or the database start date if later than January 1966) to December 2011 without language, publication or geographical restrictions. The search strategies were based on the strategy developed for Ovid MEDLINE. All search strategies for the electronic databases are provided in [Appendix 2](#).

AMED (Allied and Complementary Medicine) 1966 to 2011.
 ASSIA (Applied Social Sciences Index and Abstracts) 1966 to 2011.
 CINAHL (Cumulative Index to Nursing & Allied Health Literature) 1966 to 2011.
 Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*) 2012, Issue 1.
 Cochrane Public Health Group Specialized Register 25 January 2012.
 DoPHER (Database of promoting health effectiveness reviews) 2004 to 2011.
 EMBASE (Excerpta Medica) 1980 to 2011.
 ERIC (Education Resources Information Center) 1966 to 2011.
 HMIC (Health Management Information Consortium) 1979 to 2011.

International Bibliography of the Social Sciences (IBSS) 1979 to 2011.
 MEDLINE 1966 to 2011.
 MEDLINE In-Process & Other Non-Indexed Citations 1966 to 2011.
 PsycINFO 1966 to 2011.
 Rehabdata 1966 to 2011.
 OpenGrey (formerly OpenSIGLE) 1980 to 2011.
 Social Care Online 1970 to 2011.
 Social Services Abstracts 1979 to 2011.
 Sociological Abstracts 1996 to 2011.
 TRoPHI (The Trials Register of Promoting Health Interventions) 2004 to 2011.
 Web of Science - Science Citation Index 1979 to 2011.
 Web of Science - Social Sciences Citation Index 1979 to 2011.

Searching other resources

Reference lists of included studies and systematic reviews identified in the search were checked for additional citations, and citation tracking of identified RCTs was conducted using Scopus. In addition, experts were contacted directly and via mail lists, and the following websites were searched for publications and unpublished research.

The Association of Public Health Observatories (APHO): <http://www.apho.org.uk/>.
 International Public Health Forum (IPHF): <http://www.iphfonline.org/>.
 Local Government Association: <http://www.lga.gov.uk/lga/core/page.do?pageId=1>.
 NHS Evidence - National Library for Public Health: <http://www.library.nhs.uk/publichealth/>.
 The World Federation of Public Health Associations: <http://www.wfpha.org/>.
 World Health Organization: <http://www.who.int/en/>.
 The UK Public Health Association: <http://www.ukpha.org.uk/>.
 Conference proceedings via the British Library's ZETOC service: <http://zetoc.mimas.ac.uk/>.
 Dissertation and Theses and Index to Theses database: <http://proquest.umi.com/login>.

Mail lists

Equity, Health & Human Development
 EAHIL
 Evidence Based Health
 LIS Medical
 PUBLIC-HEALTH
 PUBLIC-HEALTH-INTELLIGENCE
 Social Policy
 LIS Research Support

Study identification and selection

The titles and abstracts of all search results were reviewed independently by two authors to select potentially relevant studies using pre-defined inclusion criteria. Studies that appeared to meet the inclusion criteria were independently reviewed in full text by two authors. Where there was a difference of opinion, a third review author also reviewed the paper and a consensus was reached.

Data collection and analysis

Assessment of risk of bias

Each eligible study was independently assessed for risk of bias by two review authors using a modified Cochrane Effective Practice and Organisation of Care Review Group (EPOC) risk of bias assessment (EPOC 2007a) and Chapter 8 (assessing risk of bias) in the Cochrane Handbook (Higgins 2008). Questions for RCTs, CCTs, CBAs and ITS study designs were incorporated into a modified version of the EPOC data abstraction form (EPOC 2007b) (see Figure 1, 'Risk of bias summary' for the categories). Where authors disagreed, a third author assessed the study and discrepancies were resolved by consensus.

Figure 1. Risk of bias summary: review authors' judgements about each risk of bias item for each included study.

	Allocation concealment (selection bias)	Blinding (performance bias and detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias	Randomisation adequately described/protected?	Protection against contamination?	Follow-up rate adequate?	Reliable primary outcome measure?	Groups measured at baseline?	Appropriate choice of controls (CBA studies only)?	Contemporaneous data collection (CBA studies only)?	IS THE STUDY AT LOW RISK OF BIAS?
Bertelsen 2008	+	-	+	+	-	+	+	-	+	+	?	?	-
Bruzzese 2006	?	-	-	?	?	?	-	+	+	+	?	?	-
Challis 2002	-	-	+	-	-	-	+	+	+	+	?	?	-
Cooper 1975	-	-	+	?	-	-	+	+	+	+	-	+	-
Coppins 2011	-	-	+	+	?	-	+	+	?	-	?	?	-
Florence 2011	?	+	+	+	-	-	+	+	+	+	?	?	?
Hultberg 2005	-	-	+	-	-	-	+	+	?	+	+	+	-
Kloek 2006	-	+	+	-	-	-	-	+	-	+	+	+	-
Lumley 2006	+	-	+	+	+	+	+	+	+	+	?	?	+
Melle 2008	-	-	+	-	-	-	+	+	+	+	?	?	-
Rosen 2006	+	+	+	-	-	+	+	+	-	+	?	?	-
Smylie 2008	-	+	-	-	+	-	+	+	-	+	+	+	-
Tucker 2006	-	-	+	+	-	-	+	+	+	+	-	+	-
Vickrey 2006	-	+	+	+	+	+	+	+	+	+	?	?	-
Woodfine 2011	+	+	+	+	+	+	+	+	?	+	?	?	+
Young 2005	-	-	+	+	?	-	+	+	+	+	-	+	-

All included studies met the minimum standard of the EPOC checklist and were assessed and reported in a 'Risk of bias' table (Higgins 2008). Where studies reported sequential results, those where follow-up fell below 60% were excluded.

Studies were defined as having a low risk of bias if they demonstrated the following: an adequate randomisation methodology; a process of allocation concealment; blinding (of participants, investigators and for outcome assessment); non-selective outcome reporting and a follow-up response rate greater than 80% (or incomplete outcome data less than 20%) (Burger 2005; Higgins 2008).

Studies that did not fulfil the criteria for demonstrating a low risk of bias were reported as having an unclear or high risk of bias after considering all the items in the checklist.

Data extraction

A modified version of the EPOC data abstraction form was developed. It included questions to capture health equity data based on those used in the draft Cochrane Health Equity Field checklist for review authors (Morris 2007). The revised form was piloted by the authors before use. Data were extracted for all studies that met the quality and inclusion criteria. Two review authors independently completed a form for each study. Data were also extracted for included studies that reported a formal evaluation of the intervention, including the use of any specific partnership assessment tool (PAT) (Dickinson 2006; Hardy 2003; Victorian Health Promotion Foundation 2005).

Where studies reported more than one endpoint per outcome, the primary endpoint identified by study authors was extracted. Where no primary endpoint was identified by the study authors, the measures with the longest follow-up and with attrition rates under 40% were reported.

Data analysis

Reporting results

Continuous outcomes were reported, where possible, on the original scale. Dichotomous outcomes were presented with odds ratios. All outcome effects were shown with their associated 95% confidence intervals.

Meta-analysis

Meta-analyses were conducted where trials reported similar outcomes. Random-effects models were used for all analyses due to the expected differences in intervention, settings and outcomes. Relative risks were used to summarise dichotomous outcomes and standardised mean differences for continuous outcomes, except

where the exact same outcome measure was used in different studies when mean differences were used.

Subgroup analysis

The number of studies with similar outcomes was not deemed sufficient to investigate subgroup analysis by population group or type of intervention.

Assessment of heterogeneity

Heterogeneity was formally evaluated using the I^2 statistic, as well as graphically using the forest plots.

Assessment of publication bias

Funnel plots to assess for publication bias were not presented due to the small number of studies in each meta-analysis (maximum of five).

Incomplete outcome data (non-response follow-up rate)

As stated in the protocol, studies with attrition greater than 40% were excluded.

Summary of findings table

The [Summary of findings for the main comparison](#) was completed to present brief information about the three categories of health outcomes. It was decided that the inclusion of evidence quality for each group of outcomes (based on the GRADE approach) was not feasible given the heterogeneity and range of study designs.

RESULTS

Description of studies

See: [Characteristics of included studies](#); [Characteristics of excluded studies](#); [Characteristics of ongoing studies](#).

Results of the search

Electronic searches yielded 19,064 references in the original search and an additional 11,001 references in the search for the updated review; 416 full-text articles were assessed for eligibility from the original search and 92 from the updated search. Sixteen studies met the inclusion criteria for the narrative synthesis, of which 11 contributed data to meta-analyses.

Excluded studies

Four hundred and ninety-one studies were excluded. Most were excluded because of the nature of the collaboration, for example, partners coming from either health or local government agencies but not both, or prescriptive collaborations set up under national or international programmes. Other studies did not report relevant health outcomes or had inappropriate study designs. The [Characteristics of excluded studies](#) table lists the 491 studies with reasons for exclusion.

Ongoing studies

One ongoing study was identified (see [Characteristics of ongoing studies](#)).

Lead author	Study design	Population	Intervention	Health outcomes
Bertelsen 2008	RCT	547 patients with first diagnosis within schizophrenia spectrum in Copenhagen and Aarhus, Denmark	The lead agency was mental health. Collaboration was between psychiatrists, psychologists, nurses, vocational therapists, social workers, family therapists working in multidisciplinary teams following agreed protocols. They delivered an intensive early intervention programme of Assertive Community Treatment, family treatment and social skills training	Primary health outcomes: Symptoms on the Scale for Assessment of Psychotic Symptoms (SAPS), Scale for Assessment of Negative Symptoms (SANS) and the Global Assessment of Functioning (GAF) scores for symptoms and for function
Bruzzese 2006	Cluster RCT	591 children in kindergarten to Grade 5, New York City, USA	The lead agency was the Local Education Authority. Collaboration was between school nurses, community and primary care physicians, school educators, public health assistants and university staff. They established Preventive Care Networks for each intervention school and delivered training for health and educational professionals	Primary health outcomes: Asthma symptoms in past 2 weeks and past 6 months, number of nights woken in past 2 weeks and past 6 months Number of days restricted activity in past 2 weeks and past 6 months Paediatric Asthma Caregiver's Quality of Life Questionnaire (PACQLQ)

(Continued)

<p>Challis 2002</p>	<p>CCT</p>	<p>95 elderly adults with dementia in Lewisham, UK</p>	<p>The lead agency was community mental health. Collaboration was between social services case managers and mental health teams. They delivered an intensive case management scheme with structured care plans. Case managers had protected case loads and control of a devolved budget. They had access to health and social care resources</p>	<p>No primary outcomes were stated Health outcomes included: Depression measured by the Comprehensive Assessment and Referral Evaluation (CARE) schedule, disability measured through Clifton Assessment Procedures for the Elderly (CAPE) behaviour rating scale Physical disability, social disturbance, communication disorder and apathy measured through CAPE Patients' overall level of risk Carers' health assessed for strain and malaise</p>
<p>Cooper 1975</p>	<p>CCT</p>	<p>189 patients with chronic neurotic illness in primary care practice in a metropolitan area, UK</p>	<p>The lead agency was primary care. Collaboration was between general practitioners and health visitors in a primary care practice, a social worker and research psychiatrists. They established multidisciplinary coordination and evaluation of patients' care through fortnightly meetings</p>	<p>Primary health outcomes: Change in psychiatric rating (scale now known as GHQ 30)</p>
<p>Coppins 2011 NEW</p>	<p>RCT</p>	<p>65 participants aged 6 to 14 years with a BMI above the 91st centile, living in Jersey, UK</p>	<p>The lead agency was the local community health service. Collaboration was between a dietician, physical activity health promotion officer, educational and clinical psychologists, physical activity instructors. They ran workshops and physical</p>	<p>Change in BMI standard deviation score. Change in weight, waist circumference, sum of skinfolds % body fat</p>

(Continued)

			activity sessions in school settings. Siblings aged 6 to 14 years and parents/guardians were encouraged to participate.	
Florence 2011 NEW	ITS	Resident populations and visitors to Cardiff and selected control cities in the UK	The lead agency was health. Collaboration was between city government (education, transport, licensing regulators) police, an emergency department consultant and an oral and maxillofacial surgeon, ambulance service and local licensees. They worked together in the Cardiff Violence Prevention Programme to share data between agencies and use the information for violence prevention through targeted policing and other strategies	Hospital admissions after violence, police recorded woundings, police recorded common assaults
Hultberg 2005	CBA	138 patients with musculoskeletal disorder in Goteburg, Sweden	The lead agency was primary care. Collaboration was between health centre physicians, nurses, occupational therapists, physiotherapists, social workers and social insurance officers working in co-financed multidisciplinary teams based in the health centres. They had access to a joint budget provided by one common administrative body. They attended weekly team meetings to discuss and intensify the rehabilitation of individual patients	Primary health outcomes: Pain level measured by the Visual Analogue Scale (VAS) Health-related quality of life measured through EuroQol 5 dimensions instrument (EQ-5D)

(Continued)

Kloek 2006	CBA	2781 residents in Eindhoven, Netherlands	The lead agency was municipal health. Collaboration consisted of multi-agency coalitions between municipal health services and representatives from social work, social welfare, city development department, neighbourhood residents organisation, general practice and researchers. They assessed neighbourhood health needs, developed action plans to improve health-related behaviour and delivered a range of activities in schools, small community groups and public events	Primary outcome was to improve health-related behaviours, measured by impact on fruit and vegetable consumption, physical activity, smoking and alcohol consumption
Lumley 2006	Cluster RCT	11,305 women giving birth in Victoria, Australia	The lead agency was local authority. Collaboration in each intervention area consisted of key stakeholders from local government, GPs, Maternal and Child Health nurses, community and consumer organisations and a community development officer forming local steering committees to deliver a Program of Resources, Information and Support for Mothers (PRISM). Interventions included components for primary care and for local community services. Clinical audits were conducted	Primary health outcome: EPDS, a 10-item scale for use in the postnatal period to identify probable depression SF36 physical and mental component scores
Melle 2008	CCT	281 patients with first episode psychosis in four catchment areas in Norway and Denmark	The lead agency was mental health. Collaboration was between mental health clin-	Primary outcome was the duration of untreated first episode psychosis Secondary health out-

(Continued)

			icians, nurses, psychologists, GPs, school staff and social workers. Specialist integrated teams delivered an Early Detection Programme for rapid assessment of possible first episode psychosis patients and community information campaigns in schools and the local media to raise awareness of mental health issues	comes included symptom levels assessed through the Positive and Negative Syndrome Scale (PANSS) scores and level of functioning through the Global Assessment of Functioning scores
Rosen 2006 NEW	Cluster RCT randomized at the level of preschool	40 public religious and secular preschools with 1029 children aged 3 and 4 years old. Additional support for children from 469 families who were in the intervention preschools Set in Jerusalem region, Israel	The lead agency was public health. Collaboration was between public health officers, Ministry of Education officials, teachers, preschools, school nurses, doctors and educational experts. They delivered an intervention consisting of educational lectures and resources, play materials, video and puppetry, along with ensuring environmental facilities were adequate to support good hand hygiene. The home component consisted of educational resources sent to families, chosen by computer-generated random numbers, of children attending the intervention preschools. Control preschools had no intervention until the study was over. Home component control families received an educational pack on toothbrushing	Illness-related absenteeism, handwashing behaviour before lunch and after using the bathroom
Smylie 2008 NEW	CBA	240 Grade Nine students in six public schools in Windsor-Essex County,	The lead agency was public health. Collabora-	Forty-six items on knowledge, birth control attitudes, contracep-

(Continued)

		Ontario, Canada	tion was between public health nurses, health promoters, social workers, teachers, a teen mother, a teen father and an HIV positive individual. They delivered a five session class-based learning programme, a newsletter and workshops to help parents communicate effectively on sexual health issues with their children	tive agency (the degree to which students felt comfortable accessing and using birth control), communication, awareness of sexual response, sex role attitudes and sexual interaction values
Tucker 2006	CBA	8703 secondary school children, median age 14 years 6 months, in Lothian and Grampian regions, UK	The lead agency was the local health board. Collaboration was between health, education and the voluntary sector working in 10 schools. As part of the <i>Healthy Respect</i> programme, they established a partnership to implement the SHARE (Sexual Health and Relationships Education) project of multidisciplinary staff training, multidisciplinary delivery in classroom lessons and drop-in sexual health services	Primary health outcomes: Self-reported sexual intercourse at <16 years, and knowledge, attitudes and intentions about sexually transmitted diseases and condom use
Vickrey 2006	Cluster RCT	408 dementia patient and carer dyads, Southern California, USA	The lead agency was primary care. Collaboration was between physicians, leaders from community agencies, a community caregiver, the researchers and care managers. They formed a steering committee to identify existing guidelines as care goals. They introduced a disease management programme promoting care guidelines, care coordination and re-	Primary outcome, extent of adherence to guidelines, was not relevant to this review Secondary health outcomes: Health-related quality of life (HRQoL) for patients and carers

(Continued)

			ferral protocols. Community agency care managers and healthcare care managers received the same formal education and training programme. Health and community agency staff collaborated to provide support to patients with dementia and their carers	
Woodfine 2011 NEW	RCT	192 asthmatic children aged 5-14 years, who had been in receipt of ≥ 3 prescriptions of corticosteroid inhalers in previous 12 months Set in Wrexham, UK	The lead agency was public health. The collaborators were local public health, primary care, Wrexham County Borough Council and academia Vent-Axia HR200XL ventilation systems were installed in the roof space and improvement/replacement of central heating system was undertaken if required	Primary: Parental assessment of the child's asthma-specific quality of life (PedQL asthma module) 4 and 12 months after randomisation Secondary: General health-related quality of life (PedQL core module), school attendance and the use of health care including medication Cost effectiveness of intervention
Young 2005	CCT	1648 vulnerable elderly patients in the Leeds area, UK	The lead agency was the health authority. Collaboration was between Leeds Health Authority and Leeds City Council. They developed a commissioning framework to provide support and rehabilitation to older patients following a health crisis at home or in hospital. A multi-agency joint care management team commissioned care from a multidisciplinary Intermediate Care Team comprising nurses, therapists and social services staff	Primary health outcome: Independence measured by Nottingham Extended Activities of Daily Living Index

Table 1. Outlines of included studies

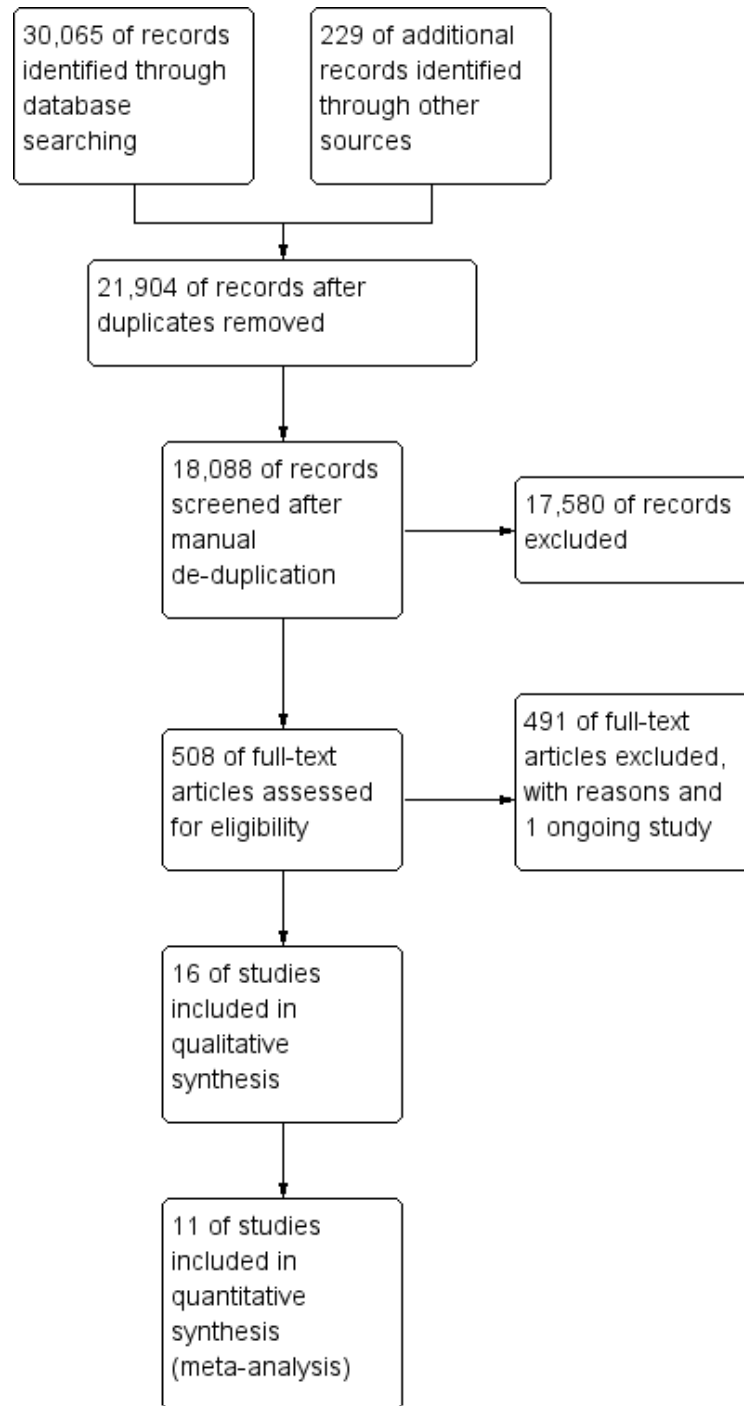
Included studies

Characteristics of studies

Sixteen studies were included in the narrative synthesis, of which seven were RCTs or cluster RCTs ([Bertelsen 2008](#); [Bruzze](#)

[2006](#); [Coppins 2011](#); [Lumley 2006](#); [Rosen 2006](#); [Vickrey 2006](#); [Woodfine 2011](#)), four studies were CCTs ([Challis 2002](#); [Cooper 1975](#); [Melle 2008](#); [Young 2005](#)), four studies were CBAs ([Hultberg 2005](#); [Kloek 2006](#); [Smylie 2008](#); [Tucker 2006](#)) and one was an ITS ([Florence 2011](#)). Eleven were included in the meta-analyses ([Figure 2](#)). A brief outline of each included study can be found in Table 1. More details are presented in the 'Characteristics of included studies' table for each study (see [Characteristics of included studies](#)).

Figure 2. Study flow diagram.



Of the 16 studies meeting the inclusion criteria (Figure 1), 15 reported information on 28,212 participants although not all participants contributed outcome data as many participants were lost to follow-up. One study monitored rates of violence in a population of 324,800 (Florence 2011). The largest number of participants (11,305) was from a study (Lumley 2006) that aimed to reduce depression and improve the physical health of mothers six months after giving birth. The next largest study (Tucker 2006) surveyed 8703 school children in two different cohorts.

Seven studies were conducted in the UK (Challis 2002; Cooper 1975; Coppins 2011; Florence 2011; Tucker 2006; Woodfine 2011; Young 2005), one in Denmark (Bertelsen 2008), one in Sweden (Hultberg 2005), one in both Norway and Denmark (Melle 2008), one in the Netherlands (Kloek 2006), two in US states (Bruzzese 2006; Vickrey 2006), one in Canada (Smylie 2008), one in Israel (Rosen 2006) and one in Australia (Lumley 2006). While reports on interventions in low or middle income countries were identified by the search strategy, many of them reflected work by international aid agencies delivering internationally agreed programmes with local partners rather than by local partnerships working to locally agreed goals.

Eight studies were delivered through community and primary care services (Bertelsen 2008; Challis 2002; Cooper 1975; Hultberg 2005; Lumley 2006; Vickrey 2006; Woodfine 2011; Young 2005), five were delivered in schools (Bruzzese 2006; Coppins 2011; Rosen 2006; Smylie 2008; Tucker 2006) and three were set in the wider community (Florence 2011; Kloek 2006; Melle 2008). No studies were based in hospitals but two (Bertelsen 2008; Young 2005) recruited participants from hospital-based services.

Bertelsen 2008, Melle 2008, Rosen 2006, Tucker 2006, Woodfine 2011 and Young 2005 succeeded in recruiting the sample sizes required by their power calculations. Lumley 2006 identified that they were not recruiting enough participants and extended the recruitment period until the required number had been recruited to the intervention group though not to the control group. Vickrey 2006 aimed to recruit 438 dyads but failed to achieve this. Hultberg 2005 did not conduct a power calculation but aimed to recruit 450 patients, which they failed to achieve despite extending the recruitment period by eight months. The remaining studies did not provide power calculations and did not state their desired sample size (Bruzzese 2006; Challis 2002; Cooper 1975; Coppins 2011; Florence 2011; Kloek 2006; Smylie 2008).

Primary outcomes

Few studies reported one primary outcome, although several had one overarching goal for which there was a range of measures. Coppins 2011 aimed to produce a change in the body mass index standard deviation score (BMI SDS) (or BMI z-score), a measure demonstrating the deviation of children's BMI from the average

of a child of the same age and sex. Kloek 2006 aimed to improve health-related behaviours measured through self-reported diet, exercise, smoking and alcohol behaviours. Melle 2008 aimed to reduce the duration of untreated first episode psychosis in order to improve mental health outcomes in the longer term. The primary outcome for Vickrey 2006 was adherence to care guidelines on the understanding that this should improve quality of life for dementia patients and their carers. Young 2005 aimed to protect the independence of vulnerable elderly patients in order to minimise hospitalisations and institutionalisation. The primary outcome for Rosen 2006 was a reduction in illness absenteeism but reliable data were hard to collect. Smylie 2008 wanted to support actual change in sexual behaviour in under 16s but it was thought inappropriate to ask school students about this so proxies relating to knowledge, attitudes, communication and self-awareness were used. All studies measured multiple outcomes and Bruzzese 2006, Challis 2002 and Vickrey 2006 included measures of carer health. The primary outcome for Bertelsen 2008 was stated to be at five years but at that point follow-up rates for symptom and function assessments were below 60% in both arms. Follow-up rates at two years were above 60%, unequal in the two arms, and assessment was not blinded.

Characteristics of participants

Seven studies delivered interventions to individual participants (Bertelsen 2008; Challis 2002; Cooper 1975; Coppins 2011; Hultberg 2005; Woodfine 2011; Young 2005). Six studies delivered interventions to populations defined by: area of residence (Kloek 2006; Melle 2008); school attended (Rosen 2006; Smylie 2008; Tucker 2006); or registered primary care clinic (Vickrey 2006). Bruzzese 2006, Florence 2011 and Lumley 2006 used a variety of interventions, some aimed at the general population and others at individuals. Two studies targeted deprived communities (Bruzzese 2006; Kloek 2006) and all but five studies (Coppins 2011; Melle 2008; Smylie 2008; Woodfine 2011; Young 2005) reported measures of deprivation. The targets of the educational programmes and public information campaigns in Melle 2008 were school children and households in the intervention areas. However, the target group to benefit were people with first episode psychosis who, if the programme was successful, would have assessment, diagnosis and treatment earlier in the course of their illness due to increased awareness and support in their community. In Kloek 2006 the programmes were delivered to children as well as adults but the outcomes were only measured in adults. Bruzzese 2006, Challis 2002 and Vickrey 2006 included measures to support carers.

Four of the five studies identified in the 2012 update were targeted at children (Coppins 2011; Rosen 2006; Smylie 2008; Woodfine

2011). The fifth study (Florence 2011) was aimed at the population of a city, particularly but not solely people making use of a city centre's night-time facilities.

Characteristics of interventions

Collaboration was delivered through a range of multidisciplinary teams working to agreed programmes. Partners included primary and secondary healthcare workers, public health officers, health promotion officers, local authority staff including social workers and care staff, teaching professionals, environmental health officers, sports and leisure officers, police and voluntary agencies.

Seven studies reported on interventions to improve the care or treatment of patients (Bertelsen 2008; Bruzzese 2006; Challis 2002; Cooper 1975; Hultberg 2005; Vickrey 2006; Young 2005) through multidisciplinary team work. Nine studies reported health education, health promotion or disease prevention initiatives (Coppins 2011; Florence 2011; Kloek 2006; Lumley 2006; Melle 2008; Rosen 2006; Smylie 2008; Tucker 2006; Woodfine 2011). Examples of health education and promotion included Melle 2008, which aimed to raise community awareness of psychosis to encourage early referrals and so decrease the duration of untreated psychosis; and Kloek 2006, which ran nutrition projects in primary schools, quit smoking courses and large annual community events related to health along with other activities such as walking events.

Six studies related to mental health initiatives (Bertelsen 2008; Challis 2002; Cooper 1975; Lumley 2006; Melle 2008; Vickrey 2006), including one focused on preventing depression and improving the physical health of mothers in the first six months after giving birth (Lumley 2006). Of the remaining five studies, two related to chronic disease management (Bruzzese 2006; Hultberg 2005), two were aimed at encouraging healthy lifestyles (Kloek 2006; Tucker 2006) and one was aimed at improving support for the frail elderly (Young 2005).

Defined at-risk populations were targeted in five studies, two in children (Bruzzese 2006; Tucker 2006) and three in the elderly (Challis 2002; Vickrey 2006; Young 2005).

One study followed longitudinal incident rates of violent assault in a defined population (Florence 2011).

Evaluation of partnerships and processes

Some authors included comments on the extent to which participants had taken part in or received interventions. For instance Smylie 2008 captured how many classroom sessions students had attended. Of the 10 authors who responded to requests for information on partnership evaluations, six studies had been formally evaluated (Challis 2002; Kloek 2006; Lumley 2006; Rosen 2006; Tucker 2006; Vickrey 2006) although data were not available for the Lumley 2006 intervention. Additionally, for Woodfine 2011 a cost effectiveness analysis was performed. However, many authors had not conducted partnership evaluations.

Risk of bias in included studies

Of the seven RCTs, only two were considered to be at low risk of bias (Lumley 2006; Woodfine 2011) and one was at unclear risk of bias (Vickrey 2006). Of the non-randomised studies, Melle 2008 and Florence 2011 were judged to be at unclear risk of bias and all the others were deemed to be at high risk of bias.

For detailed information on the risk of bias of individual studies see the risk of bias tables for each study and the risk of bias summary (Figure 1).

Adequate randomisation methodology

Most RCTs and cluster RCTs reported appropriate methods for randomisation. Bertelsen 2008, Rosen 2006, Vickrey 2006 and Woodfine 2011 used various independent methods to generate random allocation. Lumley 2006 generated a random set of eight matched pairs of areas from a stratified set of 21 eligible areas. Bruzzese 2006 and Coppins 2011 did not give a description of how participants were randomised.

Contamination of the control group

Controlling conditions in population or area level intervention studies can be hard. People are free to move between areas and there may be family or social ties between intervention and control arms which are unknown to the researchers. Three studies reported on probable contamination in the control groups of their studies. One study appeared to have been conducted to a high standard (Bruzzese 2006) but a similar intervention was introduced to the wider community, including the whole study population, part way through the study thereby contaminating the control group and reducing the potential to demonstrate a true effect from the intervention. Lumley 2006 reported that they had looked for evidence of contamination in the control areas and found that some members of the control group had received the leaflets designed for the intervention group. They concluded that as the overall intervention consisted of many additional components this was unlikely to have led to bias in the results. Kloek 2006 identified low levels of contamination in control neighbourhoods, which was to be expected as they were in the same city as the intervention neighbourhoods. For the remaining studies contamination of the control group appeared unlikely.

Allocation concealment

Based on the author report, only four studies were able to conceal allocation (Bertelsen 2008; Florence 2011; Lumley 2006; Rosen 2006).

Selective outcome reporting

Selective outcome reporting appeared to be more common in the non-randomised studies. Some studies reported follow-up results linked to previous work. For example, [Melle 2008](#) reported two year follow-up results on a study that had started recruiting participants eight to 10 years previously and which had been extensively reported by other authors. There were differences in the way the various reports described the same study, making it difficult to understand exactly what had been done and raising the possibility that some data were not being fully reported. [Challis 2002](#) reported different sets of outcomes at different follow-up periods. [Smylie 2008](#) captured full follow-up data on 22 students who had not attended any sexual health sessions and omitted to include these results in their analysis. It was not possible to establish whether [Cooper 1975](#) had used selective outcome reporting because a protocol was not available.

Level of blinding

We assessed blinding of participants and researchers. The participants and researchers in population or public health Interventions often cannot be blinded because there are clear differences between receiving the intervention and not. [Rosen 2006](#) used an interesting technique to blind families as they gave the intervention families information and equipment related to handwashing and for the control families they gave information on toothbrushing. Most studies were unable to achieve blinding of outcome assessment. Of the studies that reported blinding, [Vickrey 2006](#) used a variety of ways to achieve as high a level of blinding as possible. Participants were blinded at baseline and they were not reminded of status at follow-up. Data abstractors were blinded. Carers were blinded at the baseline survey. [Bruzzese 2006](#), [Lumley 2006](#) and [Smylie 2008](#) did not use blinding in assessments but the outcomes were judged unlikely to have been influenced by this. In [Cooper 1975](#) there was no evidence to suggest assessment had been blind, although assessment of individuals was not performed by the psychiatrist involved in their care.

Incomplete outcome data

Only studies where outcome data appeared to be adequately accounted for were included in this review. Outcome data available for less than 60% of participants at any time-point were excluded.

Unit of analysis errors

Four studies employed cluster randomisation ([Bruzzese 2006](#); [Lumley 2006](#); [Rosen 2006](#); [Vickrey 2006](#)). All used methods to account for the clustering and none of these studies were re-analysed. [Bruzzese 2006](#) used Generalised Estimating Equations (GEE) models to account for clustering. [Lumley 2006](#) used a multilevel model reporting that the intracluster correlation coefficient

(ICC) was 0.0012. [Rosen 2006](#) used mixed linear models and reported an ICC of 0.06 for overall absenteeism and 0.07 for illness absenteeism. [Vickrey 2006](#) used multilevel modelling to account for clustering, however this study contributed uncorrected dichotomous information to the mortality meta-analysis. Using the design effect of 1.57 reported in their sample size calculation (based on an ICC of 0.03) the sample size of both control and intervention groups were scaled down from 238 and 170 to 152 and 108 for the intervention and control groups respectively. Numbers of events were selected that produced proportions of events closest to the observed proportions. The effect of this design effect scaling was very small.

Interrupted time series (ITS) studies

Only one interrupted time series study ([Florence 2011](#)) was identified and this has been reported separately.

Effects of interventions

See: [Summary of findings for the main comparison Overview of studies](#)

Randomized controlled trials (RCTs)

[Lumley 2006](#) (a cluster RCT with low risk of bias) conducted a community randomized trial using the PRISM (Program of Resources, Information and Support for Mothers) approach to reduce depression and improve women's physical health after giving birth. Power calculations suggested that questionnaires needed to be sent to 9600 women in each arm and, as birth rates were lower than anticipated, data collection was extended to generate the required sample size. A total of 6248 women out of 10,144 women (61.6%) in the intervention arm and 5057 out of 8411 women (60.1%) in the control arm completed postal questionnaires six months after giving birth. The intervention and control groups appeared comparable at baseline. The mean Edinburgh Postnatal Depression Score (EPDS) was 6.91 (SE adjusted (adj) 0.11) in 6163 women in the intervention communities and 6.83 (SE adj 0.11) in 4969 women in the control communities (P = 0.61, mean difference 0.08, SE adj 0.09, 95% confidence interval (CI) -0.25 to 0.40). Mean SF-36 physical component scores were 50.24 (SE adj 0.10) for 5917 women in the intervention communities and 50.26 (SE adj 0.16) for 4761 women in the control communities (P = 0.91, mean difference -0.02, SEadj 0.19, 95% CI -0.43 to 0.39). Mean SF-36 mental component scores were 47.58 (SE adj 0.15) in 5917 women in the intervention communities and 47.91 (SE adj 0.19) in 4761 women in the control communities (P = 0.20, mean difference -0.32, SE adj 0.24, 95% CI -0.83 to 0.18). None of these findings were significant. There was no difference between intervention and control communities in the mothers'

rating of partners' practical and emotional support, with mean scores derived from a set of six questions being 6.9 in both groups.

Evaluation of the intervention

An interorganisational analysis has been conducted. It has not yet been published and a copy could not be obtained.

Summary: there were no significant differences between the two groups in any of the measures at six-months follow-up.

Woodfine 2011 (an RCT with a low risk of bias) aimed to evaluate the effectiveness of tailored packages of home improvements, providing adequate heating and ventilation in order to reduce mould spores, for children with moderate or severe asthma. They aimed to recruit 200 children to yield 80% power to detect, at 5% significance level, a change in asthma-specific quality of life of at least 0.4 of the standard deviation of the parent-completed asthma-specific module of PedsQL, a validated quality of life measure for children.

At month 12 (11 months post-intervention): 169 (88%) responded (intervention group (I) = 88; control group (C) = 89). The mean difference in PedsQL asthma scale adjusted for baseline was 7.1 (95% CI 2.8 to 11.4); standardised effect size 0.42. There were no significant differences in physical scale (4.5, 95% CI -0.2 to 9.1; standardised effect size 0.22) or psychosocial functioning (2.2, 95% CI -1.9 to 6.4; standardised effect size 0.11). The overall psychosocial scale at 12 months was 74.6 in the intervention group (n = 69) and 68.3 in the control group (n = 70) (mean adjusted difference 2.7, 95% CI -1.8 to 7.2) favouring the intervention arm. There was no significant difference in parent-reported school absence over 12 months: mean 9.2 days in intervention group versus 13.2 days in control group (Mann-Whitney U test $P = 0.091$); and mean 3.9 days in intervention group versus 6.4 days in control group for asthma-related absences (Mann-Whitney U test $P = 0.053$).

There was no significant difference in healthcare costs over 12 months between groups. The authors reported a shift from 'severe' to 'moderate' asthma in 17% of the intervention group and 3% of the control group.

Cost effectiveness of the intervention: the mean cost of modifications was £1718 per child treated or £12,300 per child shifted from 'severe' to 'moderate' asthma. 'Bootstrapping' gave an incremental cost-effectiveness ratio (ICER) of £234 per point improvement on the 100-point PedsQL™ asthma-specific scale (95% CI £140 to £590). The ICER fell to £165 (95% CI £84 to £424) for children with 'severe' asthma. The authors concluded that the intervention had been cost effective.

Evaluation of the intervention

The authors did not undertake a formal evaluation, although some information on the delivery of the programme was provided in a cost-effectiveness analysis.

Summary: the impact of asthma on childrens' lives, as measured by the asthma subscale of the parent-completed PedsQL, was significantly lessened in the intervention group 11 months after home modification. No significant improvement was seen in overall physical or psychosocial quality of life at 12 months. School absences were not statistically significantly different between groups. **Bertelsen 2008** (an RCT with high risk of bias) aimed to determine the long-term effects of an intensive early-intervention programme for first-episode psychotic patients. They assessed 547 participants at baseline before randomization and the two groups appeared well matched and representative of the client group. At two years the independent assessment was unblinded and at five years the independent assessment was blinded. (Note: the mean differences are based on a repeated model to impute missing data.)

The follow-up rate at two years was 75% in the intervention group (n = 205) and 60% in the control group (n = 164). The mean symptom score on the Scale for Assessment of Psychotic Symptoms (SAPS) was 1.06 (SD 1.26) in the intervention group and 1.27 (SD 1.40) in the control group, estimated mean difference -0.32 (95% CI -0.58 to -0.06, $P = 0.02$). The mean symptom score on the Scale for Assessment of Negative Symptoms (SANS) was 1.41 (SD 1.15) in the intervention group and 1.82 (SD 1.23) in the control group, estimated mean difference -0.45 (95% CI -0.67 to -0.22, $P < 0.001$). The mean Global Assessment of Functioning (GAF) symptom score was 51.18 (SD 15.01) in the intervention group and 48.67 (SD 15.92) in the control group, estimated mean difference 2.45 (95% CI -0.32 to 5.22, $P = 0.08$). The mean GAF function score was 55.16 (SD 15.15) in the intervention group and 51.13 (SD 15.92) in the control group, estimated mean difference 3.12 (95% CI 0.37 to 5.88, $P = 0.03$).

The primary endpoint of the study was at five years but as follow-up was below 60%, with 56% in the intervention group and 57% in the control group, and below 60% in both arms when deaths were taken into account, it is not reported here.

Evaluation of the intervention

No process evaluation has been identified.

Summary: interim results at two-year unblinded follow-up showed that the SAPS and SANS symptom scores and the GAF score for function were statistically significantly improved in the intervention group although the size of these effects was very modest (-0.32, -0.45 for SAPS and SANS respectively, both on a 6-point scale; and 2.45 on the GAF, a 100-point scale). There was no difference in the GAF score for symptoms between the two groups.

Vickrey 2006 (a cluster RCT with medium risk of bias) tested the effectiveness of a dementia guideline-based disease management programme on quality of care and outcomes for patients

with dementia. Primary outcomes related to the level of adherence to 23 guidelines and were not relevant to this review. Secondary outcomes were assessed through a caregiver survey. At baseline assessment the intervention and control groups did not differ in patient and caregiver characteristics. At 18-months follow-up the mean patient health-related quality of life score had decreased from 0.17 (SD 0.30) to 0.10 (SD 0.30) in the intervention group and from 0.16 (SD 0.32) to 0.03 (SD 0.29) in the control group. The adjusted analysis for intervention versus control group between-group difference was 0.06 (95% CI 0.005 to 0.11, $P = 0.034$). Caregiver health-related quality of life, measured using EuroQol-5D, changed from a mean of 0.83 (SD 0.17) at baseline to 0.81 (SD 0.16) at 18-months follow-up for carers of patients in the intervention group and from 0.80 (SD 0.22) at baseline to 0.77 (SD 0.23) at 18-month follow-up for carers of patients in the control group. The adjusted analysis for intervention versus control between-group difference was 0.02 (95% CI -0.01 to 0.06, $P = 0.127$).

By the 12-month follow-up 34 out of 238 patients had died in the intervention group and 20 out of 170 patients had died in the control group.

Evaluation of the intervention

All care management communications and encounters with the participants were recorded on an electronic database. Subsequent analysis of the impact of the three agencies demonstrated that contact with healthcare organisation care managers was associated with improved quality. Further, statistically and clinically significant incremental gains in quality were seen with the addition of the other provider types (community agency care managers and healthcare organisation primary care providers). It was noted that the three groups of staff may have recorded their interventions differently. Factors associated with accepting case management were also analysed and were found to include cohabitation of the caregiver, lesser severity of dementia and higher patient co-morbidity. **Summary:** at 18-month follow-up the caregivers reported that quality of life had deteriorated for the intervention and control groups but the intervention group had a better health-related quality of life score than the control group. There was no difference in the health-related quality of life for the carers of the two groups. **Bruzzese 2006** (a cluster RCT with high risk of bias) established a preventive network of school nurses, teachers and primary care providers to improve elementary school childrens' control of asthma. Randomization was at the school level. Intervention and control groups were assessed at baseline and found to be comparable apart from the control group children waking more nights due to asthma in the previous two weeks. For every 50 children known by the school nurse to have asthma, the network identified another 25 children with an asthma diagnosis and another 20 children with symptoms suggestive of asthma. Follow-up at two years by telephone interview of caregivers was 64% in the inter-

vention group ($n = 195$) and 61% in the control group ($n = 173$). The mean number of days with symptoms in the past two weeks was 2.9 (SD 3.7) in the intervention group and 2.6 (SD 3.4) in the control group; mean number of days with symptoms in the last six months was 32.1 (SD 44.9) in the intervention group and 32.0 (SD 45.6) in the control group. The mean number of nights woken in the past two weeks was 1.6 (SD 2.6) in the intervention group and 2.2 (SD 3.4) in the control group; mean number of nights woken in the last six months was 26.3 (SD 40.6) in the intervention group and 26.8 (SD 42.3) in the control group. The mean number of days with restricted activity in the past two weeks was 1.5 (SD 2.45) in the intervention group and 1.5 (SD 2.8) in the control group; mean number of days with restricted activity in the past six months was 25.4 (SD 41.3) in the intervention group and 23.6 (SD 41.0) in the control group. Caregivers' quality of life assessed using the Paediatric Asthma Caregiver's Quality of Life Questionnaire was mean 5.5 (SD 1.5) in the intervention group and 5.5 (SD 1.6) in the control group. None of these outcomes were significantly different.

Evaluation of the intervention

No process evaluation has been carried out.

Summary: the network identified more children with diagnosed and undiagnosed asthma than were known to the school nurses. There were no differences in outcomes between the children in the two groups or between the two groups of carers at two-year follow-up.

Coppins 2011 (an RCT with a high risk of bias) aimed to treat overweight and obese children through a multi-component family focused education package. Workshops were conducted on healthy eating, physical activity, psychological well-being and behaviour change, including reducing sedentary activity; and offered regular physical activity sessions for obese and overweight children aged 6 to 14 years, their siblings aged 6 to 14 years, and their parents. Outcomes were measured at six-month intervals for 24 months but the intervention was given to the intervention-control group in the first 12 months and to the control-intervention group in the second 12 months, so the point of comparison was taken to be at 12 months for the purpose of this review. There were some differences between the groups at baseline with the intervention group being on average 16.5 months older than the control group. The primary outcome was change in BMI SDS. At 12 months the change in the intervention group BMI SDS was -0.17 (95% CI -0.26 to -0.08) and the adjusted difference was -0.13 (95% CI -0.26 to -0.008). The change for the control group BMI SDS was -0.08 (95% CI -0.24 to 0.07) and the adjusted difference was -0.14 (95% CI 0.28 to -0.001). The mean difference between the intervention and control groups was -0.09 (95% CI -0.26 to 0.09, $F = 0.99$, $P = 0.32$).

Evaluation of the intervention

The corresponding author reported that no information relating to process or partnership evaluations has been published.

Summary: the multi-component intervention to help overweight and obese children adopt healthier lifestyles and normalise their BMI was not effective compared to the wait-list control group.

Rosen 2006 (an RCT with a high risk of bias) evaluated the effects of a comprehensive hand hygiene programme, including improving environmental facilities where indicated, on preschool children aged 3 and 4 years in 40 preschools (20 intervention, 20 control). They also nested an RCT within the intervention group to test a home education component. Sample size was calculated to detect a 25% drop in illness absenteeism with a power of 80% and a two-sided alpha level of 0.05, given a control group illness absenteeism rate of 6% per child day (36 preschools, rounded up to 40). A planned 60-day study period was extended to 66 days during the trial. Sample size for the home intervention was similarly calculated to detect an illness absenteeism reduction from 4.5% to 3.0%. The required sample size was 204 families per arm. The main outcome measures were overall absenteeism and illness absenteeism from preschool. For the purposes of this review the outcome measure of illness absence was used. The researchers also measured handwashing behaviours.

The average per day percentage of illness absenteeism was 3.40 days (489 children) and 3.11 days (540 children) for the intervention and control preschools respectively: intraclass correlation coefficient 0.0747, between day correlation 0.0417, adjusted RR of 1.00 (95% CI 0.81 to 1.32, $P = 0.97$). For the home component, illness absenteeism was 2.92 ($n = 237$) in the intervention group and 3.04 ($n = 232$) in the control group, adjusted RR of 0.94 (95% CI 0.76 to 1.23, $P = 0.57$).

Evaluation of the intervention

The corresponding author reported a detailed survey of the teachers', parents' and childrens' reactions to the programme and there were comments made on the activity of the partners delivering the intervention. The feedback was extremely positive and other schools have taken up the programme several years after completion of the study. There were descriptions of the partnership in the published papers but there does not appear to have been a formal evaluation of the partnership itself.

Summary: neither the joint handwashing and environmental intervention in preschools nor the home education component had an effect on childrens' illness absenteeism.

Controlled clinical trials (CCTs)

Melle 2008 (a controlled clinical trial with medium risk of bias) investigated the effectiveness of community and health professional educational campaigns to reduce the duration of untreated psychosis through early referral and prompt assessment and treatment

of those affected. Patients were recruited over a four-year period and followed up for two years after recruitment. Power calculations suggested they needed to recruit 100 patients in each group. The researchers invited 186 patients in the intervention area and 194 patients in the control area to join the study: 141 and 140 patients agreed, respectively (74% of all eligible patients). At recruitment the mean duration of untreated psychosis in the intervention group ($n = 118$) was five weeks (range 0 to 1196) and in the control group ($n = 113$) it was 16 weeks (range 0 to 966) ($P < 0.01$, Mann-Whitney U test). Symptomatic and functional status was measured at two years in 118 patients from the intervention areas and 113 patients from the control areas. The mean Positive and Negative Syndrome Scale for schizophrenia (PANSS) positive component was 9.13 (SD 4.97) in the intervention group and 9.06 (SD 4.02) in the control group. The mean PANSS negative component was 15.54 (SD 6.48) in the intervention group and 19.19 (SD 9.06) in the control group. The mean Global Assessment of Function (GAF) symptoms score was 53.64 (SD 17.68) in the intervention group and 50.81 (SD 14.54) in the control group. The mean GAF functioning score was 53.80 (SD 17.32) in the intervention group and 49.47 (SD 14.78) in the control group. Only the PANSS negative component score was statistically significant ($P < 0.001$, t test), in favour of the intervention group, after correcting for multiple testing.

Evaluation of the intervention

No process evaluation was identified.

Summary: the mean duration of untreated psychosis was significantly shorter in the intervention area but this is an intermediate outcome and it is not clear if it resulted in lasting health benefit. The intervention group had lower scores for the negative component of the PANSS scale than the control group at two-year follow-up and the difference was statistically significant. There were no significant differences between the two groups for the positive component of the PANSS scale or for the GAF function and symptom scores. The authors noted that clinical ratings of the PANSS scale had not been masked and there was therefore the possibility of assessment bias.

Challis 2002 (a controlled clinical trial with high risk of bias) evaluated the Lewisham Case Management Scheme. This intensive scheme integrated social service case managers into a Community Mental Health Team for the Elderly; caring for a target population of older people with dementia. They had control over a devolved budget and had access to all relevant health and social care resources. The 45 patients in the intervention group and 50 in the control group appeared to be comparable at baseline. Follow-up rates were different for each measure and only health measures with greater than 60% follow-up are reported here. At six months the mean CAPE Behaviour Rating Scale score for disability, a composite measure of physical disability, social disturbance, communication disorder and apathy, increased from 14.94 (SD

5.11) to 15.83 (SD 5.60), mean change of 0.89, for the intervention group (n = 35); and decreased from 16.07 (SD 4.67) to 15.33 (SD 5.30) (n = 43), mean change of -0.74, for the control group: $F = 2.87$ (95% CI for the group difference -0.29 to 3.55, P value not significant). The mean level of risk to the cases decreased from 1.94 (SD 1.17) to 1.30 (SD 1.21), mean change of -0.64 in the intervention group (n = 33); and increased from 1.42 (SD 1.26) to 1.47 (SD 1.24), mean change 0.05 in the control group (n = 43) (95% CI for the group difference -1.30 to -0.07, $P < 0.05$). From the 43 matched pairs, 12 deaths were recorded in the intervention group and 15 in the control group at 24-month follow-up but the total number of deaths from the 95 participants was not reported. The study reported that around 80% of participants had carers, implying there were 75 carers in total. At 12 months the mean overall strain on carers decreased from 4.00 (SD 1.62) to 3.00 (SD 1.57), mean change of -1.0 in the carers for the intervention group (n = 26); and from 4.09 (SD 1.28) to 2.91 (SD 1.80), mean change of -1.18 in the carers for the control group (n = 32): $F = 0.17$ (95% CI for group difference -0.74 to 1.11, P value not significant). Malaise decreased from a mean of 5.92 (SD 5.28) to 4.32 (SD 4.34), mean change -1.60 in the carers for the intervention group (n = 25); and from 6.68 (SD 3.99) to 6.32 (SD 3.60), mean change -0.35 in the carers for the control group (n = 34): $F = 2.84$ (95% CI for group difference -2.73 to 0.23, P value not significant).

Evaluation of the intervention

The author supplied some additional information which reported progress of the project rather than formally evaluating the collaborative partnership. It demonstrated that the model had been highly valued and staff particularly appreciated having control over relatively small budgets. Local commissioners of health and social care jointly agreed to maintain the service and it has since become mainstream, recognised as providing good practice in terms of its integration and co-location of staff.

Summary: the researchers' unblinded assessment of patients' overall level of risk indicated a decrease in the intervention group and an increase in the control group at six months. There was no difference in the CAPE Behaviour Rating Score between the intervention and control group patients at six months and no differences in strain or malaise between carers of the intervention and control patients at 12 months.

Cooper 1975 (a controlled clinical trial with high risk of bias) assessed the therapeutic value of attaching a social worker to a metropolitan primary care practice for the management of chronic neurotic illness. Participants were assessed at baseline and were broadly similar in demographic profiles. There were some differences between the groups in diagnoses but the paper reports the differences as being of doubtful significance to the findings. The psychiatric mean score at one-year follow-up decreased from 26.9 to 16.6, mean change -10.3 (SD 10.2) in the intervention group

(n = 92); and from 26.1 to 19.7, mean change -6.4 (SD 9.9) in the control group (n = 97): test of significance $t = 2.68$, $P < 0.01$. The team analysed the impact various professional groups may have had on the ratings and concluded that the therapeutic effect of the experimental service was not confined to any one member or professional group in the team but a result of the group interaction.

Evaluation of the intervention

No process evaluation has been identified.

Summary: the psychiatric score of both groups decreased at one-year follow-up suggesting decreased clinical severity in both groups, more so in the intervention group than in the control group.

Young 2005 (a controlled clinical trial with high risk of bias) compared a group of older people before and after the introduction of intermediate care services for older people. The primary outcome was independence at six months measured by the Nottingham Extended Activities of Daily Living Score (NEADL). The patients (848 in the intervention group and 800 in the control group) were assessed at baseline and were similar, though the control group were recruited in two blocks between November 1998 and November 2000 and the intervention group were recruited in two blocks between January 2001 and October 2001. At 12-month follow-up the mean NEADL score decreased by -2.23 (SD 3.69) for the intervention group patients (n = 483) and by -2.51 (SD 3.65) for the control group patients (n = 490). The difference of the means was 0.28 (95% CI -0.18 to 0.74). By 12 months 333 patients (39%) had died in the intervention group and 301 patients (38%) had died in the control group.

Evaluation of the intervention

The corresponding author reported that no evaluation was performed.

Summary: the level of independence decreased by a similar amount in the two groups by the six-month follow-up.

Controlled before-and-after studies (CBAs)

Hultberg 2005 (a controlled before-and-after study with high risk of bias) assessed whether intensifying services through co-financed teams with personnel from primary care, social insurance and social services would have any effect on the health status of patients attending rehabilitation services for musculoskeletal disorders in primary care health centres. Despite extending recruitment by eight months the study managed to recruit less than half the targeted sample size, with 107 in the intervention group and 31 in the control group. Participants were assessed at baseline and were similar for lifestyle and clinical characteristics. Demographic

distributions were similar but there were differences in socio-economic distribution, with a higher proportion of white collar workers in the intervention group. At 12-month follow-up 57% (61/107) of intervention patients and 58% (18/31) of control patients had an increased perceived pain level ($P = 0.712$). A further 24% (26/107) of intervention patients and 29% (9/31) of control patients had a decreased perceived pain level at this point (P value not given). The mean changes in EuroQol 5 dimensions (EQ-5D) index values between baseline and one-year follow-up were +0.145 for the intervention patients and +0.069 for the controls but the difference was not significant ($P = 0.27$).

Evaluation of the intervention

The corresponding author reported that no evaluation was performed.

Summary: there were no statistically significant differences in pain levels or quality of life between the intervention and control groups at follow-up.

Kloek 2006 (a controlled before-and-after study with high risk of bias) investigated the impact of a two-year community intervention on health-related behaviour among adults aged 18 to 65 years living in deprived neighbourhoods. At baseline 2781 participants, of 4800 who were eligible, completed a postal questionnaire (1426 in the intervention neighbourhoods and 1355 in the control neighbourhoods) and the characteristics of the respondents in the two groups were similar. Two-year follow-up data were collected from 69% ($n = 1929$) of the respondents to the baseline survey but not all people completed all the data fields. From baseline to two-year follow-up, mean vegetable consumption (g/day) changed from 100 (SD 51) g/day to 99 (SD 52) g/day for 953 people in the intervention neighbourhoods and from 99 (SD 52) g/day to 100 (SD 51) g/day for 851 people in the control neighbourhoods. Mean fruit consumption had changed from 125 (SD 105) g/day to 130 (SD 105) g/day for 958 people in the intervention neighbourhoods and from 130 (SD 106) g/day to 125 (SD 101) g/day for 856 people in the control neighbourhoods. Physical activity was estimated as METs/week, where MET is the metabolic energy expenditure calculated as the total minutes of physical activity per week multiplied by the intensity. Mean physical activity had changed from 7253 (SD 5443) METs/week to 6898 (SD 5358) METs/week for 953 people in the intervention neighbourhoods and from 6931 (SD 4945) METs/week to 6817 (SD 4677) METs/week for 832 people in the control neighbourhoods. The percentage of people who were current smokers changed from 41% to 40% for 938 people in the intervention neighbourhoods and from 41% to 39% for 853 people in the control neighbourhoods. The percentage of people who had excessive alcohol consumption changed from 5% to 4% for 964 people in the intervention neighbourhoods and from 8% to 7% for 853 people in the control neighbourhoods. Analysis of covariance of 15 comparisons within and between the groups showed that none of these changes were

significant apart from fruit consumption, which attained borderline significance ($P = 0.044$).

Evaluation of the intervention

A formal process evaluation was conducted. Data were gathered prospectively through the programme using documentation of meetings and activities. A postal questionnaire was conducted at the end of the intervention asking questions about programme awareness and programme participation. The number of activities run (dose delivered), the number of people who took part (dose received) and the reach of the programme across the intervention areas were all analysed. An organisational chart was produced showing the involvement of the participating organisations in the development of community plans and implementation of the programme.

For dose delivered: of 53 planned activities, 10 could not be delivered due to low participation rates of neighbourhood residents. Dose received: across the intervention neighbourhoods, 69% to 71% of the survey respondents were aware of one or more large-scale programme activities and 11% to 13% had taken part in at least one of the activities. Reach: the programme was thought to have reached around 2500 residents altogether, 21% of one neighbourhood and 62% of the other. The authors found a difference in goals and priorities. The Municipal Health Services wanted to use evidence-based methods for the purposes of research; whilst the neighbourhood coalition wanted to use intuitively reasonable methods to promote behaviour change. They also found that most funding came from external sources and the Municipal Health Service, raising concerns about sustainability of future community coalitions. They concluded that it is feasible to deliver a community intervention in deprived neighbourhoods but that the intervention they used may not have been strong enough or achieved sufficient exposure to attain community-wide health behaviour change. They also concluded that practitioners and researchers should agree beforehand on what the realistic goals are and valid outcomes for any proposed community health programme.

Summary: there were no significant differences between the two groups in four of the five outcomes at follow-up. There was a small statistically significant improvement in self-reported fruit consumption but this could have been a chance finding as so many comparisons were analysed. It is not clear how important this improvement would be for individuals' overall health levels.

Smylie 2008 (a controlled before-and-after study with a high risk of bias) evaluated an extended sex education programme for grade nine students in six (three intervention) public schools in Windsor-Essex County, Canada. The intervention consisted of in-school class-based student learning, videos and discussions on dating and healthy relationships, teen panel discussion, a teens interacting with parents newsletter and parent workshops. There was no primary outcome as it was thought to be inappropriate to ask about sexual behaviours in under 16s, but a range of knowledge, values,

attitudes, perceived risk, communication about sex, self-efficacy and skills were measured through self-completed questionnaires in class. The authors point out that given the large number of tests for significance, confidence should only be placed in results at $P = 0.01$ or lower.

The mean percentage of all questions answered correctly at baseline was 78% ($n = 240$). At follow-up this was 87% for the intervention group ($n = 95$) and 79% for the control group ($n = 116$) ($P < 0.001$). Birth control attitudes changed from 7.00 at baseline ($n = 240$) to 6.55 for the intervention group ($n = 6.55$) and 7.59 for the control group ($n = 116$), where lower values represented more positive attitudes towards birth control. The difference was not significant. For contraceptive agency (the degree to which students felt comfortable accessing and using birth control) responses had changed from 7.41 ($n = 240$) to 6.72 for the intervention group ($n = 95$) and 6.86 for the control group ($n = 116$), where lower values represented higher contraceptive agency. These differences were not significant. Communication with others about sexuality had changed from baseline 13.28 ($n = 240$) to 12.86 for the intervention group ($n = 95$) and 11.96 for the control group ($n = 116$), where lower values represented more comfort talking about sexuality with the named party. The differences were not significant. Awareness of own sexual responses changed from 7.27 at baseline ($n = 240$) to 6.81 for the intervention group ($n = 95$) and 6.49 for the control group ($n = 116$), where lower values represented more sex comfort. The change for the control group was not significant at the 0.01 level, nor for the intervention group. Sex role attitudes changed from 8.05 at baseline ($n = 240$) to 7.11 in the intervention group ($n = 95$) and 8.95 in the control group ($n = 116$), where higher values represented stronger traditional sex role values. The difference between intervention and control groups was significant at follow-up ($P < 0.001$). Sexual interaction values changed from 8.56 at baseline ($n = 240$) to 8.23 for the intervention group ($n = 95$) and 9.86 for the control group ($n = 116$), where lower values represented greater acceptance of a partner's rejection of sexual activity. The difference between the intervention and control group at follow-up was not significant at the 0.01 level.

Evaluation of the intervention

The corresponding author reported that no evaluation was performed.

Summary: there were some changes in knowledge and attitudes of the students from this intervention but these measures were taken only one month after completion of the programme and did not necessarily lead to change in actual behaviour of the students. However, the statistics were not fully reported, particularly any differences between intervention and control groups at baseline. **Tucker 2006** (a controlled before-and-after study with high risk of bias) evaluated the effect of the Sexual Health and Relationships Education (SHARE) project. SHARE was part of a national

demonstration programme Healthy Respect on teenage sexual health behaviour. The team evaluated project outcomes through surveys of year three and four pupils (average age 14 years 6 months) in 2001 and again in 2003, two years after implementation of the project. They used a standardised 12-part questionnaire (the SHARE questionnaire) to test for changes in the proportion of pupils reporting sexual intercourse at age < 16 years, and changes in knowledge, attitudes and intentions related to sexually transmitted infections (STI) and condom use. Children in the intervention schools were similar to those in the control schools for gender, family composition and ethnicity but there were differences in parental house ownership, educational attainment and employment. These variables were included in the multivariate models for adjustment. In the intervention schools 2760 children completed the questionnaire at baseline and 2796 at the two-year follow-up. In the control schools, 1564 children completed the questionnaire at baseline and 1583 at follow-up.

At baseline 665 children (24%) in the intervention schools reported sexual intercourse compared to 287 children (19%) in the control schools, adjusted OR of 1.29 (95% CI 1.10 to 1.52, $P = 0.002$). At two-year follow-up 629 (23%) of children in the intervention schools reported sexual intercourse compared to 280 (18%) in the control schools. The statistically significant differences between the intervention and control schools at baseline for reported sexual intercourse were maintained at two-year follow-up, with the intervention schools still reporting higher levels than the control schools (OR 1.35, 95% CI 1.15 to 1.60, $P < 0.001$). Knowledge: at baseline 1845 children in the intervention schools (69%) knew that STIs may be asymptomatic compared to 1066 children (72%) in the control schools, adjusted OR of 0.95 (95% CI 0.82 to 1.10, $P = 0.51$). At follow-up there was no significant change: 1966 children (74%) in the intervention schools knew that STIs may be asymptomatic compared to 1151 children (74%) in the control schools (OR 1.00, 95% CI 0.86 to 1.17, $P = 0.96$). At baseline 972 children in the intervention schools (37%) believed that condom use reduced the chance of contracting an STI compared to 627 children (42%) in control schools, adjusted OR of 0.85 (95% CI 0.74 to 0.98, $P = 0.02$). At follow-up the difference had disappeared: 1089 children (41%) in the intervention schools believed that condom use reduced their chance of contracting an STI compared to 647 children (42%) in the control schools (OR 1.00, 95% CI 0.88 to 1.14, $P = 0.99$).

At baseline 1667 children in the intervention schools (63%) believed that condoms are effective in preventing HIV/AIDS compared to 1040 children (70%) in the control schools, adjusted OR of 0.78 (95% CI 0.67 to 0.90, $P = 0.001$). At follow-up the difference was smaller but still significant: 1739 children (65%) in the intervention schools believed that condoms are effective in preventing HIV/AIDS compared to 1082 children (70%) in the control schools (OR 0.85, 95% CI 0.73 to 0.98, $P = 0.03$).

Attitude: at baseline 2090 children in the intervention schools (79%) agreed with planning protection from STIs before sex com-

pared with 1220 children (82%) in the control schools, adjusted OR of 0.88 (95% CI 0.74 to 1.05, $P = 0.15$). At follow-up 2186 children in the intervention schools (82%) agreed with planning protection from STIs before sex compared with 1301 children (84%) in the control schools, adjusted OR of 0.92 (95% CI 0.77 to 1.10, $P = 0.34$).

Intention: at baseline 1737 children in the intervention schools (66%) intended to obtain their own condoms compared with 983 (66%) in the control schools, adjusted OR of 1.0 (95% CI 0.86 to 1.15, $P = 0.98$). At follow-up 1825 children (69%) in the intervention schools intended to obtain their own condoms compared with 1061 children (69%) in the control schools, adjusted OR of 1.03 (95% CI 0.89 to 1.19, $P = 0.73$).

Evaluation of the intervention

This study was a demonstration project conducted in 2001 to 2003 as part of the Healthy Respect programme. A formal independent evaluation was conducted using inventories of services associated with sexual health provision, interviews with professional staff and young people, and from scrutiny of committee documentation and project reports. They found evidence of extensive partnership working and new forms of service delivery. Partnership development was not uniform and some key agencies were under-represented, particularly community education and social work. They commented that young people were not well engaged in the development of services. Consultation exercises about drop-in centres demonstrated young people wanted longer opening hours, services at weekends, access to contraceptives and a holistic approach; but few of these were met. There were also many concurrent initiatives in the intervention and control areas aimed at improving life chances of young people. These could have masked or magnified the effect of the intervention. However, the researchers concluded that valuable sustainable partnerships had been established which would help develop sexual health services for young people over a longer time period. A second phase of Healthy Respect has since been run.

Summary: children in the intervention area were more likely to report sexual intercourse than the children in the control area and the difference was statistically significant at baseline and two years after implementation of the programme. The children in the intervention school were as likely as those in the control schools to know that STIs can be asymptomatic and this did not change after two years. Children in the intervention schools were less likely to believe that use of condoms reduced the chance of contracting STIs at baseline but the difference had disappeared at follow-up. However, fewer children in the intervention schools knew that condoms are effective at preventing HIV/AIDS than in the control schools at baseline and after two years. The attitudes and intentions in the two groups remained similar.

Interrupted time series (ITS)

Florence 2011 (an interrupted time series study with a low risk of bias) evaluated the impact of anonymised information sharing between agencies to prevent injury related to violence. The Cardiff Violence Prevention Programme developed a data sharing strategy. Information (location, time, day and type of weapon) from all patients reporting injury in a violent incident was captured electronically in hospital emergency departments. The personal identifiers were deleted and the information shared with the partnership crime analyst, who combined it with police intelligence data to generate maps of violence hotspots. This allowed specific risks and patterns to be observed by the partnership and led to new strategies by police and the local authority to minimise the risk of further violence. There were 33 months of observation before the programme was implemented and 51 months after implementation.

Florence reported incidence rates of hospital admissions related to violence before and after intervention in the control and intervention cities (Cardiff being the intervention city compared to 14 cities designated 'most similar' by the Home Office in England and Wales).

Monthly average counts of hospital admissions after violence changed from 21.03 before implementation to 16.89 after implementation in the intervention city and from 21.20 to 33.35 in control cities. The population adjusted rate of violence per 100,000 population changed from 6.71 to 5.39 in the intervention city and from 5.33 to 8.39 in the control cities. An adjusted analysis indicated this was statistically significant (incidence ratio 0.79, 95% CI 0.73 to 0.85).

Police recorded that wounding assaults changed from 168.52 to 256.76 in the intervention city and from 181.03 to 382.48 in the control cities. Population adjusted rates per 100,000 population for police recorded wounding assaults changed from 53.79 to 81.96 in the intervention city and from 53.86 to 113.80 in the control cities. An adjusted analysis indicated this was statistically significant (incidence ratio 0.68, 95% CI 0.61 to 0.75).

Police recorded common assaults changed from 47.79 to 61.14 in the intervention city and from 142.65 to 110.88 in the control cities, with population adjusted rates per 100,000 population changing from 15.25 to 19.51 in the intervention city and from 42.44 to 32.99 in the control cities. An adjusted analysis indicated this was statistically significant (incidence ratio 1.38, 95% CI 1.13 to 1.70).

This is consistent with the intervention successfully downgrading woundings to less serious assaults in the intervention group.

Evaluation of the intervention

No process evaluation has been identified.

Summary: the partnership based on information sharing and redirecting resources to tackle violence hotspots led to a substantial

reduction in violent injury.

Outcomes by study design

Summarising the evidence from the seven RCTs, evidence of health benefit was extremely weak. [Lumley 2006](#), a study at low risk of bias, showed no evidence of health gain. [Woodfine 2011](#) found parents reported that asthma had less impact on their children's lives following home modification but there was no improvement in overall physical or psychosocial quality of life. In [Vickrey 2006](#) the carers reported health benefits for patients but not for themselves. [Bertelsen 2008](#) showed inconsistent results with benefits in three out of four measures following unblinded intermediate assessment. The fourth study ([Bruzzese 2006](#)) showed no health benefits for patients or their carers. [Coppins 2011](#) and [Rosen 2006](#) found no health benefits.

Looking at the four CCTs, [Melle 2008](#), a study at medium risk of bias, showed a reduced duration of untreated psychosis in the experimental group but this did not appear to translate into longer-term benefit: only one of the four mental health scores showed a significant difference and this measurement was possibly biased due to unblinded clinical assessment. Of the remaining CCTs, [Cooper 1975](#) showed clear benefits in both intervention and control groups, although the benefit was higher in the former. [Challis 2002](#) showed benefit in just one measure out of many and [Young 2005](#) showed no health benefits. [Challis 2002](#) recognised the burden on carers but the intervention did not improve carers' health. Of the CBAs, [Kloek 2006](#) conducted several analyses and found one positive measure that was of doubtful clinical significance (self-reported fruit consumption). [Hultberg 2005](#) showed no health benefits in any measures. The results of the study by [Tucker 2006](#) were that the intervention group's worse health behaviour at baseline, a higher rate of sexual intercourse under the age of 16 years, remained at follow-up two years later. [Smylie 2008](#) reported some short-term changes in knowledge and attitudes but there was no longer term follow-up to see if the benefits were sustained or led to changes in behaviour.

The only ITS identified ([Florence 2011](#)) entailed a long-term partnership with continuing dialogue between partners resulting in multiple collaborative interventions. It appeared to lead to a significant reduction in violent injury.

Interventions to improve care or treatment of individual patients

Of the seven interventions designed to improve the management of individual patients, two showed clear health benefits ([Cooper](#)

[1975](#); [Vickrey 2006](#)), two showed benefits in some measures ([Bertelsen 2008](#); [Challis 2002](#)) and three showed no benefits from the interventions ([Bruzzese 2006](#); [Hultberg 2005](#); [Young 2005](#)).

Health education, health promotion or disease prevention initiatives

Of the seven population-level interventions, one showed a decreased rate of violent injuries ([Florence 2011](#)) and four showed improvement in one or more of the many health outcomes measured ([Kloek 2006](#); [Melle 2008](#); [Smylie 2008](#); [Woodfine 2011](#)). Two studies showed no benefits ([Lumley 2006](#); [Tucker 2006](#)).

Mental health initiatives

The largest study in the review, and the only mental health intervention rated as low risk of bias ([Lumley 2006](#)), identified no health benefits. [Cooper 1975](#) suggested a real improvement for the intervention group and [Vickrey 2006](#) reported health benefits for the patients but not the carers. [Bertelsen 2008](#) showed inconsistent results with some but not all measures of symptoms improved. [Melle 2008](#) and [Challis 2002](#) showed a mixed picture, with benefits in a small proportion of the many outcomes measured.

Healthy lifestyle initiatives

[Kloek 2006](#) failed to show any health benefit arising from a wide-ranging community intervention apart from a minimal increase in self-reported fruit consumption. In [Tucker 2006](#) the children in the intervention group had worse outcomes than the control group for reported sexual intercourse under the age of 16 years. Both studies were at high risk of bias. [Rosen 2006](#) and [Coppins 2011](#) also found no health benefits from their interventions.

Chronic disease management

[Bruzzese 2006](#), [Hultberg 2005](#) and [Young 2005](#) all failed to demonstrate any health benefit from their interventions. All these studies were at high risk of bias.

Resource implications

Resource data presented in the reports were captured and, where no quantitative data were available, qualitative conclusions were made by the review authors on the level of resources which would be required to deliver the intervention being tested (see Table 2).

Study	Observations on resources needed to deliver the intervention
Bertelsen 2008	Significant additional resource required to deliver intervention
Bruzzese 2006	Substantial support needed to deliver the intervention.
Challis 2002	Mean costs per annum: £23,402 for intervention group, £19,053 for control group. Additional resources required could account for any benefits achieved
Cooper 1975	Additional resources in intervention group included a social worker allocated to GP practice and involvement of two research team psychiatrists
Coppins 2011 NEW	Cost per child was estimated at £403 compared with £45 for usual care of 1.5 hours of individual dietetic consultations
Florence 2011 NEW	Additional resource was a data analyst to combine health and police data
Hultberg 2005	The total healthcare cost for an average patient in the intervention was EUR 1979 and EUR 1286 for controls
Kloek 2006	Expensive programme to implement and additional service could explain any improvements rather than the collaboration itself
Lumley 2006	Additional resource requirements included employment and training of community development officers and the production and distribution of information packs
Melle 2008	Additional resources would be required to replicate this service. (USD 390 for awareness raising strategies - unclear whether this is per patient)
Rosen 2006 NEW	Additional resources included medical and epidemiological lectures given to the teachers, environmental equipment for the preschools, educational resource packs and puppet theatre visits. For the home intervention there were information packages. Teachers needed to spend time reinforcing hand hygiene messages with the children in class
Smylie 2008 NEW	The routine sex education curriculum was usually delivered by physical education teachers and varied in time spent and style of delivery. The intervention programme was highly structured and included several specialists: sexual health worker, social worker from a sexual assault crisis centre, public health nurse. Plus a newsletter and several three-hour parent workshops
Tucker 2006	Exact costs unclear though additional costs incurred for training and new drop-in centres
Vickrey 2006	Significant extra resources appeared to be used in the intervention group, although it is unclear what costs were associated with this
Woodfine 2011 NEW	Significant additional resource required. Cost effectiveness of intervention: Shift from 'severe' to 'moderate' asthma: I = 17%; C =3%. Mean cost of modifications: £1718 per child treated or £12,300 per child shifted from 'severe' to 'moderate'. No significant difference in healthcare costs

(Continued)

	over 12 months between groups. 'Bootstrapping' gave an incremental cost-effectiveness ratio (ICER) of £234 per point improvement on the 100-point PedsQL™ asthma-specific scale (95% CI £140 to £590). ICER fell to £165 (95% CI £84 to £424) for children with 'severe' asthma
Young 2005	Appears to be reorganisation of existing resource rather than utilising additional resources

Table 2: Resources required to deliver the interventions in the included studies.

Several studies specifically reported the additional costs incurred by the intervention arm as compared to the control, and the team working with Woodfine 2011 conducted a formal cost-effectiveness study alongside the RCT. Whilst costs were not provided for all studies, it was clear that in most studies the interventions required additional resources. Young 2005, the only study which appeared to require no additional resources, failed to demonstrate any benefits arising from the intervention.

Meta-analysis of the effects of interventions

Mortality

Three studies were included in a meta-analysis investigating the impact of collaboration on mortality (Challis 2002; Vickrey 2006; Young 2005) as shown in Analysis 1.1. The pooled relative risk was 1.04 in favour of control (95% CI 0.92 to 1.17). The I² statistic was 0%. There was no difference in the relative risk of mortality in the intervention population compared to the control population. These three studies all investigated older patients: Challis 2002 and Vickrey 2006 were conducted in patients with dementia; and Young 2005 was conducted in patients presenting to emergency admission elderly care departments with falls, confusion, incontinence or immobility. This last study was the largest included in this meta-analysis, contributing over 90% of the weight. Excluding it did not change the results (RR 0.95, 95% CI 0.61 to 1.48).

Morbidity

Morbidity was addressed under four headings: mental health, physical health, quality of life and the Global Assessment of Function symptoms scale.

Mental health

Five studies were included in a meta-analysis investigating the impact of collaboration on mental health (Bertelsen 2008; Cooper 1975; Lumley 2006; Melle 2008; Woodfine 2011; Woodfine 2011a) as shown in Analysis 2.1. The pooled standardised mean difference was -0.28, favouring intervention (95% CI -0.51 to -

0.06). The I² statistic was 84%, indicating that these results need to be interpreted cautiously. From a visual inspection of the forest plot the studies appear reasonably consistent, with only Lumley 2006 favouring control. Removing this study did not substantially alter the pooled relative risk (RR -0.36, 95% CI -0.52 to -0.19). The populations investigated in these studies were quite different: Bertelsen 2008 was conducted in patients with schizophrenia; Cooper 1975 in patients with chronic neurotic illness; Lumley 2006 in pregnant women; Melle 2008 in patients with a diagnosed episode of psychosis; and Woodfine 2011 in children with asthma. The interventions were also very different.

Physical health

Five studies were included in a meta-analysis investigating the impact of collaboration on physical health (Bruzzese 2006; Coppins 2011; Hultberg 2005; Lumley 2006; Woodfine 2011; Woodfine 2011a) as shown in Analysis 2.2. The pooled standardised mean difference was statistically different from zero (SMD -0.07 in favour of intervention, 95% CI -0.20 to 0.07). There was no evidence of improved physical health in the intervention arm versus the control arm. Although the I² statistic was only 16% the forest plot revealed some heterogeneity between the studies. This is to be expected as the study populations were quite different: kindergarten children with asthma (Bruzzese 2006); children aged 6 to 14 years old in the top 10% of BMI (Coppins 2011); adults with musculoskeletal disorders (Hultberg 2005); pregnant women (Lumley 2006); and children aged 5 to 14 years with asthma (Woodfine 2011). Most of the weight was assigned to Lumley 2006, being the largest paper, but excluding this study does not greatly alter the pooled relative risk (RR -0.08, 95% CI -0.28 to 0.12).

Quality of life

Three studies were included in a meta-analysis investigating the impact of collaboration on quality of life (Bruzzese 2006; Vickrey 2006; Woodfine 2011; Woodfine 2011a) as shown in Analysis 2.3. The pooled standardised mean difference was not statistically different from zero (SMD -0.08 favouring intervention, 95% CI -0.44 to 0.27). The intervention effect was not large. The I² statistic was 83%, and visual inspection of the forest plot did not indicate

substantial heterogeneity. There was no significant difference in quality of life for the intervention arm compared to the control arm. [Bruzese 2006](#) was conducted in kindergarten children with asthma, [Vickrey 2006](#) in patients with dementia, and [Woodfine 2011](#) in children aged 5 to 14 years with asthma.

Global assessment of function symptoms score scale

Two studies were included in a meta-analysis investigating the impact of collaboration on function measured by the Global Assessment of Function symptoms score (GAFSS) scale ([Bertelsen 2008](#); [Melle 2008](#)) as shown in [Analysis 2.4](#). The pooled mean difference was -2.63, favouring intervention (95% CI -5.16 to -0.10). The GAFSS scale ranges from 1 to 100 and so a difference of just over two and half should be considered a small effect. The I^2 statistic was 0% and visual inspection of the forest plot indicated that the two studies were not substantially different. There was an improvement in the symptoms, as measured by the GAFSS, in the intervention arm versus the control arm and the improvement was statistically significant. [Bertelsen 2008](#) was conducted in patients with schizophrenia and [Melle 2008](#) was conducted in patients with a diagnosed episode of psychosis.

[Rosen 2006](#) investigated the impact of the intervention on sickness absence, but the results were not included in any of the outcomes.

Behaviour change

Only two studies addressed behaviour change outcomes ([Kloek 2006](#); [Smylie 2008](#)). However the outcomes measured were very different: [Kloek 2006](#) included exercise, diet, smoking status and alcohol consumption as outcomes whilst [Smylie 2008](#) measured knowledge. Therefore no meta-analysis was performed. One study investigated the impact of an intervention on handwashing ([Rosen 2006](#)), but data extraction could not be performed due to the lack of reported information.

In addition to [Kloek 2006](#) and [Smylie 2008](#), three other studies were not included in any meta-analysis: [Rosen 2006](#), [Florence 2011](#) and [Tucker 2006](#).

Since most studies included in the meta-analyses were at high risk of bias, a sensitivity analysis was not performed.

DISCUSSION

This review explores the health impact of local interagency collaborations between health and local government agencies compared to standard services, measured by changes in health outcomes.

The aim was to examine the effectiveness of collaborative interventions between agencies, and not disciplines. The routine services delivered to control groups in included studies were often coordinated between agencies but did not include staff members

working outside their usual professional roles or their employing agencies. We found studies where individuals collaborated at the personal level or health organisations employed professionals who might traditionally work in local government, but we did not include them as the aim of the review was to examine studies where the agencies themselves established partnerships. This is a more sustainable solution than relying on individuals to maintain working practices outside their own organisation's traditional boundaries.

From over 500 papers looked at in full text, only 16 studies were eligible for inclusion in the review and, overall, there was little or no reliable evidence of health benefits from the interventions.

Two possibilities need to be considered for this lack of effect. First, the process of collaboration may not have been optimal, leading to interventions not being fully delivered. There was evidence from the reports that some teams had not fully implemented the intervention ([Bruzese 2006](#); [Young 2005](#)) and this may have contributed to the lack of success in some studies.

Second, the process of collaboration was optimal but the desired outcomes were not achieved. [Lumley 2006](#), the study with the highest number of participants, reported extensive activity directed at primary care and local community agencies to improve post-natal outcomes. Collaboration appeared to be effective and the interventions were delivered as planned but no health benefits were achieved. This would support the hypothesis that locally-based collaboration is not associated with additional health benefits when compared to routine services.

Analysing evaluations linked to the included studies in this review may help answer why these interventions failed to make an impact on peoples' health, but few studies reported formal process of partnership evaluations. Where the research teams reported evaluations, or where they stated they had encountered difficulties, the details were captured.

The difficulties of delivering interventions at a population level

Conducting interventions at the population level requires different approaches from studies that assess the impact of interventions on individuals. Population-level interventions are not conducted in isolation so control over settings and service delivery is harder to achieve, as demonstrated by the evaluation of [Tucker's](#) study of school students ([Tucker 2006](#)) which identified a number of other initiatives operating concurrently across the study area.

Whilst our searches identified initiatives from national programmes such as [Sure Start 2004](#), no studies met the inclusion criteria.

[Florence 2011](#), an ITS study, combined several sets of routinely collected data to identify potential trouble areas which could then be policed differently and could have environmental modifications. The partnership was established in 1997 and the programme

was implemented in full from 2001, demonstrating the length of time it can take to develop working in effective partnership. Results are reported up to 2007 so the partnership was sustained over a number of years. The resulting trends in violent assault rates suggested substantial improvement for the intervention area compared to other similar cities.

Young 2005 reported that the implementation of intermediate care services coincided with the introduction of Primary Care Trusts, although they did not think this had an effect on the intervention as community services were not changed.

Lumley 2006 had the largest sample size. It reported a complex intervention, combining personal support to the target group of new mothers, educational support to the fathers of their respective babies, and environmental adjustments to encourage new mothers to socialise. The study failed to demonstrate any differences between intervention and control groups. In the five years that the study was being planned, changes were implemented in local government which included dismissing elected local councillors, appointing commissioners and amalgamating 210 local councils into 78. Half of all municipal services were put out to tender, including the maternal and child health programmes in most municipalities. It might be hard to maintain strong partnerships in the face of such disruption though the researchers still managed to deliver the intervention.

Some interventions may be applied to the whole population in order to deliver benefits to at-risk groups or individuals within the population. This was the case for Melle 2008, where awareness-raising information campaigns were designed for the general public, school children, teachers and health professionals to encourage early identification of individuals with possible psychosis, and so encourage prompt access to specialist assessment and treatment.

Kloek 2006 recognised that the results of their intervention might have reflected secular trends in the population of the Netherlands at that time. They assessed the potential impact of population movements on their results. Study authors estimated that 11% of respondents to their baseline survey had moved outside the intervention area at two-year follow-up. Those coming into the area after the start of the trial would have been less exposed to the intervention overall. Some of those moving out of the intervention area may have moved into a control area, potentially introducing contamination. The effect of these movements could be to mask the true size of effect that could be achieved by the intervention in a more controlled environment.

Randomization may only be possible at the organisational level, such as school, primary care clinic or area of residence, as many of the studies showed. It is particularly challenging for multi-agency collaborative interventions to be implemented as RCTs as they are often, by necessity, implemented within organisational boundaries to conceal allocation. It has often been proposed that cohort studies or ITS studies should be used to research interventions at a population level but very few of these studies were found.

Achieving consistency in the intervention can be challenging.

Young 2005 reported that the intervention was not delivered to the whole arm as planned. Where it was delivered there were delays in engaging with many of the cases.

Bertelsen 2008 demonstrated that it can be hard to maintain high follow-up rates with long-running studies.

The aim of the interventions was not always directly focused on improving the health of patients or the population. Young 2005 investigated the impact of intermediate care services for frail elderly patients following emergency admission. The explicit aim was to reduce long-term care and hospital use, with the intermediate outcome being to improve patients' level of independence. It is possible that many other studies had similar underlying motives that were not acknowledged in the papers but which had been the driving force for setting up the intervention. Outcomes such as hospitalisation and other service use were not accepted as health outcomes for this review because the direction for health benefit is not always clear. Sometimes increased service use is a beneficial outcome, reflecting better access to an appropriate level of care, but in other instances it reflects more episodes of deterioration in health.

Effects of different models of collaboration

As much information as possible was captured on the levels at which collaboration was being developed, identifying strategic, commissioning and operational involvement of partners and the ways they worked together in teams (for example agreed strategies and protocols, multidisciplinary teams, joint training, evaluation and financing arrangements). This information is presented in a narrative form in the 'Characteristics of included studies' tables. The intention had been to explore the effect on health outcomes of different types of collaboration. However, as so many of the studies were at high risk of bias this analysis was not performed.

The impact of additional resources being used in the interventions

The focus of the review is health outcomes and not costs, cost effectiveness or cost benefits of experimental services. Therefore economic evaluations were excluded. Nonetheless, cost data were collected where reported, and where increased funding or resources were required to deliver the intervention this has been identified. The only formal cost-effectiveness study, performed by Edwards 2011, was of Woodfine 2011. It demonstrated that a programme of environmental improvements to homes had led to improved quality of life. Although it had cost more than routine services, the analysis concluded that the programme was cost effective.

Many interventions consisted of enhanced services compared to the routine services available for the control groups. Despite the additional use of resources, few studies showed a significant impact on patient outcomes. If there had been a significant benefit for the intervention groups it would have been difficult to separate out

the impact of collaboration from the impact of simply providing more care, more benefits or more support.

Unintended consequences

The narrative synthesis and the limited meta-analyses of outcomes suggest the interventions lead to no or very weak health benefits, but there was no suggestion that collaboration was directly causing harm to participants.

Overall completeness and applicability of evidence

A large number of surveys and case studies were found, but no studies of collaborative interventions by local government and health agencies working together to tackle obesity prevention, drug and alcohol abuse or smoking cessation were identified. Of the included studies, mental health issues are covered in six studies (Bertelsen 2008; Cooper 1975; Lumley 2006; Melle 2008; Vickrey 2006; Woodfine 2011), musculoskeletal disorders in one (Hultberg 2005) and frail older people by one (Young 2005). The update has broadened the range, with additional studies looking at injury prevention (Florence 2011), the impact of hand washing programmes (Rosen 2006), obesity management (Coppins 2011), asthma (Bruzzese 2006; Woodfine 2011) and sexual knowledge and attitudes (Smylie 2008; Tucker 2006), and one on more general healthy lifestyles (Kloek 2006). Many interventions had broad aims to tackle a variety of lifestyles and environmental stresses rather than focusing on single issues. From a public health perspective, it is important to take this broad approach but it poses challenges to research as it makes the investigation complex and will generate multiple outcomes, where the significance of improvement in a single variable may be difficult to interpret.

Three studies addressed environmental facilities and resources to bring about improvements (Florence 2011; Rosen 2006; Woodfine 2011). Of these, two appear to have been successful, which is plausible as it is recognised that health is influenced by environmental factors (Marmot 2010).

Some studies based in low and middle income countries were identified but none met the inclusion criteria for this review. Studies were excluded for a variety of reasons, most notably study design or the lack of one or other partner (health or local authority). In addition, some presented collaborative work where the lead partner was an international agency and the level of local flexibility was limited.

Most studies included in this review were conducted in high income countries (UK, Australia, USA, Scandinavia, Canada and the Netherlands). They compared the outcomes of collaboration between local health and local government services with those achieved by local services routinely working together with clearly defined roles and responsibilities. The results may not be relevant where local services are still evolving, or where there are extreme shortages of staff and resources.

This review did not set out to examine how collaboration between partners can improve processes such as service planning, capacity building or service development. Equally the aim was not to look at collaboration taking place in response to acute incidents or disease outbreaks. Such collaborations are in effect the local routine services working together in planned ways to manage unusual events. They tend to be reported post hoc and to focus on lessons learned for all partners.

Inadequate reporting of study design

Some potentially relevant studies were reported incompletely and did not present enough information to allow assessment of collaboration, study design or potential for bias. We attempted to contact authors for clarification but those studies which remained unclear were excluded (see [Characteristics of excluded studies](#)).

Quality of evidence

Many of the identified studies were investigating relevant partnerships but were of poor quality or failed to implement the intended service (see [Characteristics of excluded studies](#)). All the included studies except Lumley 2006 and Woodfine 2011 had methodological weaknesses with the potential for bias. Common problems included lack of allocation concealment, blinded outcome assessment and either a lack of information on study power or a failure to recruit sufficient participants. Some included studies examined how fully the interventions they were investigating had been implemented. Young 2005 found only 29% of patients in the intervention group received the care package; and of that group 44% not doing so until 10 days or more after discharge. Kloek 2006 reported that 53 activities had been planned as part of their community-wide programme to improve health-related behaviours but only 43 programmes ran.

Many studies reported that the period of follow-up was too short to demonstrate the anticipated benefits, but the one study reporting five-year results had follow-up rates below 60% (Bertelsen 2008) and another study planning five and 10-year follow-up only presented patients' results at two-year follow-up despite being published 11 years after the start of the programme (Melle 2008).

This review has generated a picture of some scattered statistically significant health benefit outcomes but the overall distribution of positive findings is inconsistent within and between studies. Where studies used composite measures to assess health outcomes (such as SF-36 and PANSS) they tended to report the measures in their component parts, for example as SF-36 physical component score (PCS) and SF-36 mental health component score (MCS), rather than reporting the overall measure. In such instances the possibility of selective outcome reporting cannot be excluded. Generally where there may be some statistically significant differences for component scores the clinical impact of these scores is less than that of the overall measure.

Agreements and disagreements with other studies or reviews

There is a huge volume of literature documenting collaborative interventions where benefits have been claimed, but we did not find any other recent systematic reviews addressing this overarching question. A similar systematic review looking at the impact of multi-agency partnerships on public health outcomes, which excluded studies measuring impact on individuals, reported that evidence was partial and it was difficult to ascertain any health effects attributable to partnership working, despite the costs associated with establishing these public health partnerships (Smith 2009).

In the context of few rigorously designed and conducted studies on this topic, it is not clear that collaborative arrangements are more beneficial to the health of the participants than standard care. Even if collaboration could improve health outcomes, there are insufficient data to determine which models are most likely to be successful. The literature identified on improving lifestyles is based largely on subjective measures, including attitudes, but there is little evidence of meaningful benefits resulting from such changes. In the area of chronic disease management the literature was dominated by case studies and small single centre studies, which do not generate strong evidence of benefit or harm. Included mental health studies reported positive outcomes in component scores but the overall outcomes do not indicate that collaboration confers health benefits at either patient or population level. There is no evidence of clinically important benefit from the studies we identified in health promotion and health education interventions or in chronic disease management.

AUTHORS' CONCLUSIONS

Implications for practice

Despite decades of research on the impact of enhanced collaboration between local health and local government services there is no reliable evidence that it necessarily improves health outcomes when compared to standard services.

This review only identified two methodologically sound, high quality studies. One of these showed modest improvements in some aspects of health, the other found no health improvements. Some studies reported a few positive outcomes but these were not reflected in the overall outcome measures and the positive results may have been due to the additional funding or resources that were made available for the collaboration.

It is possible that local collaborative partnerships making environmental changes may succeed in improving health but the evidence base is still too weak to be confident that this is the case.

Multi-agency collaborative initiatives are hard to implement, usually more expensive than standard services, and may be subject to

external changes outside the control of the partnership. New partnerships should be clear about the outcomes they aim to achieve and these outcomes should be relevant to all partners. They should monitor outcomes, ideally starting well before any intervention is initiated, and evaluate how well they are delivering any new service.

When considering changes in service provision, evaluation needs to be included in the planning phase and before the implementation of the service in order to demonstrate whether the services are being delivered as designed and if they are working as well as intended. There needs to be a distinction between how well the service is being delivered and what outcomes the service is achieving.

Implications for research

Although agencies and individual professionals appear enthusiastic about collaboration, methodological problems in the primary studies and incomplete implementation of initiatives have prevented the development of a strong evidence base to understand what, if anything, works and why. We will continue to look for evidence on how well collaborations work for future updates, particularly searching for process and partnership evaluations of our included studies. We welcome comments and information on potentially relevant papers and studies.

High quality population-level research is hard to conduct and there are many questions still unanswered about partnership working. Our review has demonstrated that RCT designs for population studies are possible, though challenging to conduct with sufficient rigour. Consideration needs to be given to designing studies using methods in line with best practice before the intervention is implemented. Research studies need to have comparable intervention and control groups and the partnership being tested needs to be clearly described in terms of agencies engaged, what their roles are, what resources are being shared, whether any joint documents such as plans and protocols are being used and whether any training, audit or evaluation is undertaken. Clear results need to be presented in a timely fashion and in sufficient detail to support critical appraisal.

Service development in low and middle income countries is often supported by international aid agencies but there is little evidence of how to establish effective local partnerships. A systematic review looking at outcomes from international agencies working with multi-agency local partnerships in low and middle income countries would add valuable evidence in this area.

Further research is needed to understand how to influence behaviour for public health gain in the context of challenging global secular changes. Further attention should be given to exploring the potential health gains that can be achieved through collaborating to implement environmental changes.

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* *Indicates the major publication for the study*

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Bertelsen 2008

Methods	<p>A randomised controlled trial recruiting patients between January 1998 and December 2000 with two year and five year follow-up</p> <p>Role of collaborating partners</p> <p>Lead agency: Mental health</p> <p>Strategic involvement (policy making and service planning): Secondary health care</p> <p>Commissioning (implementing strategy taking account of resources available): Primary and secondary health care, social services</p> <p>Operational (providing services directly): Primary and secondary health care, social services</p> <p>Set in Denmark.</p>
Participants	<p>547 patients (275 intervention group, 272 control group) aged between 18 and 45 with a first time diagnosis within the schizophrenia spectrum (F2 category codes of ICD 10) and no history of receiving antipsychotic medication for more than 12 continuous weeks. Patients were recruited from inpatient and outpatient mental health services in Copenhagen and Aarhus. Of eligible patients only 5% refused to participate.</p> <p>Male 58% (intervention group) 60% (controls)</p> <p>Mean age 26.6 years in both groups</p>
Interventions	<p>Intensive early-intervention programme was defined by protocols and consisted of three core elements, Assertive Community Treatment (ACT), family treatment where possible and social skills training where needed.</p> <p>ACT teams were based at the Copenhagen Hospital Corporation and Psychiatric Hospital, Aarhus and consisted of psychiatrist, psychologist, nurse, vocational therapist and social worker. Psycho-educational family treatment was provided by a family therapist</p> <p>Caseload ratio was 1 researcher for every 10 patients.</p> <p>Each intervention patient was allocated a team member responsible for maintaining contact and securing coordination of the treatment across different treatment facilities and across the social and health sectors</p> <p>Over a two year period patients were offered an individual plan of treatment, regular visits as required, at least weekly, and psycho-educational treatment lasting 1.5 hours every second week over 18 months. Social skills training was provided if required via modular course. After two years patients returned to standard treatment</p> <p>Standard treatment for controls and intervention patients after the first 2 years was generally provided at a community mental health centre but in a few cases was a provided by a general practitioner. They may have had contact with social workers. A staff member's caseload in the community mental health centre varied between 20 and 30 patients</p>
Outcomes	<p>Outcomes were measured at two year (n=369,) and five year (n=301) follow-up.</p> <p>Primary outcome measures were symptoms according to the Scale for Assessment of Psychotic Symptoms (SAPS), Scale for Assessment of Negative symptoms (SANS) and the social functioning element of the Global Assessment of Functioning (GAF) scores for symptoms and for function.</p> <p>Secondary outcomes included secondary diagnosis of substance abuse, medication, use</p>

	<p>of services, depressive symptoms, suicidal behaviour, housing situation and vocational situation.</p> <p>Course of illness measure with Life Chart Schedule.</p> <p>Main diagnosis and substance abuse measured by Schedule for Clinical Assessment in Neuropsychiatry (SCAN Version 2.0 in 1998 and 2.1 since 1999).</p> <p>Duration of untreated psychosis at entry to the trial.</p> <p>Suicidal behaviour measured by self-reported suicide attempts and ideation.</p> <p>Days in hospital, emergency department contacts, outpatient contacts from the Danish Psychiatric Central Register.</p> <p>Information on independent living and supported housing from the Civil Status Register.</p> <p>Employment, family situation, sick leave, early-age pension from the Integrated Database for Labour Market Research.</p> <p>Mortality and cause of death from the Cause of Death Register</p>	
Notes	<p>Follow-up at 2 years was unequal, 75% in intervention group and 60% in control group. Follow-up at 5 years was below 60% in both groups (but above threshold set from power calculation of 142 in each arm)</p> <p>Significant additional resource required to deliver intervention</p> <p>One of the initial hypotheses was that “Increased co-operation between the primary health and social sectors leads to reduced duration of untreated psychosis, as knowledge of psychosis and easy access to treatment is essential for co-workers’ referral policy.” We were unable to obtain further details from the authors on this point</p> <p>The fidelity of the treatment programme, measured with the index of fidelity of assertive community treatment, was 70% in Copenhagen and Aarhus</p> <p>Overall risk of bias was high.</p>	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Computer generated allocation.
Blinding (performance bias and detection bias) All outcomes	High risk	Assessment at 2 year follow-up was not blinded. Single blind assessment by independent investigator at 5 years but follow-up rate was below 60% so not reported here
Incomplete outcome data (attrition bias) All outcomes	Low risk	Estimated mean differences are based on a repeated measurement model, assuming that the distribution of missing data could be estimated from the information from previous interviews
Selective reporting (reporting bias)	Low risk	Protocol provided in linked paper Jørgensen 2000.
Other bias	High risk	Problems related to potential selection bias.

Bertelsen 2008 (Continued)

Randomisation adequately described/protected?	Low risk	Centralised telephone randomisation.
Protection against contamination?	Low risk	Control patients may have had access to social worker but this was part of standard treatment
Follow-up rate adequate?	High risk	Follow-up rates unequal at 2 years (75% in intervention group and 60% in control group). At the end point of the trial at 5 years, follow-up assessment rates only 56% (intervention group) and 57% (control group) , 57% and 58.8% respectively when adjusted for deaths, so these results were not included in this review
Reliable primary outcome measure?	Low risk	Scale for Assessment of Positive (SAPS) and Negative (SANS) Symptoms, plus functional GAF (Global Assessment of Functioning) well established and inter-rater reliability checked
Groups measured at baseline?	Low risk	Groups approximately balanced
Appropriate choice of controls (CBA studies only)?	Unclear risk	Not applicable
Contemporaneous data collection (CBA studies only)?	Unclear risk	Not applicable
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH

Bruzzese 2006

Methods	<p>Cluster randomized controlled trial with 12 and 24 month follow-up. Schools and families enrolled in May 1998 (wave 1) and September 1999 (wave 2)</p> <p>Collaborating partners</p> <p>Lead agency: Local Education Authority</p> <p>Strategic involvement (policy making and service planning): Primary health care, health promotion, Local Education Authority</p> <p>Commissioning (implementing strategy taking account of resources available): Local Education Authority</p> <p>Operational (providing services directly): Primary health care, health promotion, Local Education Authority</p> <p>Set in United States of America.</p>
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<p>Participants</p>	<p>591 students in kindergarten to grade 5 (307 in intervention schools, 284 in control schools), mean age at baseline 7.8 years, and their caregivers, from 44 schools (out of 650 schools meeting eligibility criteria of >50% of students receiving free lunch and >67% being ethnic minorities) from all 5 boroughs of New York City Males 57.8% (intervention), 59.4% (controls). Eligible families (those with a child diagnosed with asthma and symptoms of persistent asthma) were enrolled through telephone call. Identified from case-detection forms, returned to school by approximately 27% of all caregivers Schools were paired by size and borough and randomly assigned in each pair to either intervention or control school. Families were enrolled in 2 waves and data collection lasted 2 years for each wave. Wave 1 data collection started for 24 schools in May 1998 and wave 2 in 20 schools began September 1999</p>
<p>Interventions</p>	<p>Preventive care networks for each intervention school were established between school staff, health professionals and families of students with asthma. Each school health team included a full time school nurse, school physician 2 days per month, public health assistant 2-3 days per week, schoolteacher or administrator, and a parent Columbia University staff led a three day training workshop for the school health teams and an additional single training session was run for teachers on asthma and their role in helping children manage asthma in school. Workshops on preventative therapy, communication, patient education strategies and medication plans were run for children's primary care providers (PCPs) using PACE (Physician Asthma Care Education) programme School nurses and physicians worked with families to assess children's asthma severity and healthcare needs. They sent sample treatment plans to the students' PCPs based on each student's asthma severity and encouraged caregivers and PCPs to develop asthma management plans in line with National Heart, Lung and Blood Institute criteria School health team nurses conveyed instructions from the management plans to teachers and also arranged referral for medical care if needed. They delivered this intervention in full for 2 years and continued to give ad hoc support for a further year</p>
<p>Outcomes</p>	<p>Outcomes were measured at 12 month (n= 472) and 24 month (n=368) follow-up Primary outcomes Asthma symptoms (number of days with symptoms in past 2 weeks and past 6 months, number of nights woken in past 2 weeks and past 6 months) Limitations due to asthma (number of days restricted activity in past 2 weeks and past 6 months), number of days absent from school as reported by parents in past 2 weeks School absences for all reasons measured using school records Paediatric Asthma Caregiver's Quality of Life (PACQLQ). Secondary outcomes Health care utilization (number of urgent visits to clinician in past 12 months, number of Emergency Department visits in past 12 months, number of hospitalisations in past 12 months)</p>
<p>Notes</p>	<p>No power calculation was reported. Only 25% of PCPs completed PACE training and only 10% returned treatment plans to school and these were often inconsistent with NHBLI treatment guidelines Substantial support will be needed to replicate intervention</p>

Overall risk of bias was high.		
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	No description of allocation method.
Blinding (performance bias and detection bias) All outcomes	High risk	No blinding but outcome was judged to not be influenced. Pg 309
Incomplete outcome data (attrition bias) All outcomes	High risk	Data only provided for 368/591 participants (62%) at 24 months
Selective reporting (reporting bias)	Unclear risk	No protocol available to compare intended with reported outcome measures
Other bias	Unclear risk	Unclear how participants were selected.
Randomisation adequately described/protected?	Unclear risk	No description of randomisation method. Pages 307 and 308
Protection against contamination?	High risk	Unrelated to this study, New York City Department Of Health and Mental Hygiene provided Open Airways for Schools (OAS) programme for 3 rd -5 th grade students with asthma, including those in control group. Approximately half the sample met the age criteria to receive OAS and intervention and control group participation levels were comparable
Follow-up rate adequate?	Low risk	Rate >60% and balanced across both arms.
Reliable primary outcome measure?	Low risk	After 6 months, intervention group had significantly fewer asthma symptoms but after 2 years, only difference was fewer hospitalisations in past 12 months
Groups measured at baseline?	Low risk	Groups approximately balanced
Appropriate choice of controls (CBA studies only)?	Unclear risk	Not applicable
Contemporaneous data collection (CBA studies only)?	Unclear risk	Not applicable

IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH
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Challis 2002

Methods	<p>A controlled clinical trial with follow-up at 6 months and 12 months</p> <p>Collaborating partners Lead agency: Community mental health Strategic involvement (policy making and service planning): No evidence of collaborating at the strategic level Commissioning (implementing strategy taking account of resources available): Secondary health care, social services Operational (providing services directly): Primary health care, secondary health care, social services Set in United Kingdom.</p>
Participants	<p>The study looked at elderly adults with dementia in Lewisham, South London. Forty-five cases in the intervention group and 50 controls were assessed over a two year period. From these, 43 matched pairs were identified to compare destination outcome and costs.</p> <p>30.2% male, mean age 80.8 (intervention)/79.8 yrs (control).</p> <p>Subjects were identified by two community mental health teams for the elderly (CMHTE) as new referrals or cases with a major change in circumstances, or with significant needs unmet by existing services, or perceived as at risk of institutionalisation</p> <p>Over 70% had severe cognitive impairment and high/maximum disability 80% had a carer and half of the carers were suffering marked stress</p>
Interventions	<p>Individuals in the intervention arm received care from Lewisham Case Management Scheme, an intensive case management scheme with case managers in a CMHTE caring for a target population of older people with dementia. Case managers were social services employees with protected case loads of 20-25 cases and control over a devolved budget. They were integrated into the mental health team and had access to all relevant health and social care resources for the care of older people with dementia. They maintained structured care plans which were completed at regular intervals during the 2 years of the study</p> <p>Individuals in the control arm received care from a CMHTE without a case management service.</p>
Outcomes	<p>No primary outcome stated.</p> <p>Assessment of need and quality of life was conducted at 6 and 12 months</p> <p>Destinational outcomes (still being at home, being placed in a care home or dying) were measured every 6 months for 2 years</p> <p>Quality of life was measured through the CARE schedule to measure depression, disability through CAPE Behaviour Rating Scale for physical disability, social disturbance, communication disorder and apathy</p> <p>Quality of care was measured through CAPE, assessing dependency</p> <p>Overall need ratings and level of risk judged by research assessors</p> <p>Carers' health was assessed through the Malaise scale as a global indicator of stress</p>

Challis 2002 (Continued)

Notes	<p>No power calculation was reported. Main changes 44% extra for home care, 24% for extra professional care including case management, 27% acute hospital care Mean costs per annum: £23,402 for intervention group, £19,053 for control group. Additional resources required could account for any benefits achieved. Majority of additional costs were incurred by Social Services (£8815 per patient per year intervention group/ £4676 per patient per year in control) Overall risk of bias was high.</p>	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	Groups were not randomised. One community health team received the intervention and another acted as control
Blinding (performance bias and detection bias) All outcomes	High risk	Not possible due to nature of allocation.
Incomplete outcome data (attrition bias) All outcomes	Low risk	Full outcome data provided for 43 matched pairs (86 of the 95 cases included)
Selective reporting (reporting bias)	High risk	Different outcomes reported at different follow-up periods.
Other bias	High risk	Patients were identified for inclusion in the study by their clinicians
Randomisation adequately described/protected?	High risk	No randomisation
Protection against contamination?	Low risk	Separate settings so contamination unlikely.
Follow-up rate adequate?	Low risk	>80% and balanced across both arms but rate varied between individual outcomes
Reliable primary outcome measure?	Low risk	No primary outcome stated but reliable measures used to assess health outcomes
Groups measured at baseline?	Low risk	Groups approximately balanced
Appropriate choice of controls (CBA studies only)?	Unclear risk	Not applicable

Challis 2002 (Continued)

Contemporaneous data collection (CBA studies only)?	Unclear risk	Not applicable
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH

Cooper 1975

Methods	<p>Controlled clinical trial with follow-up at 12 months.</p> <p>Collaborating partners Lead agency: Primary care Strategic involvement (policy making and service planning): Primary health care Commissioning (implementing strategy taking account of resources available): Primary health care, social services Operational (providing services directly): Primary health care, secondary health care, social services Set in United Kingdom.</p>	
Participants	<p>189 primary care patients living in a metropolitan area with chronic neurotic illness were followed up at 12 months</p> <p>Intervention group 92 patients (86.8% of patients enrolled), males 26.1%, mean age 42.1 years</p> <p>Control group 97 patients (84.3% of patients enrolled), males 22.7%, mean age 45.5 years</p>	
Interventions	<p>Attachment of a social worker to a primary care practice, and involvement of research psychiatrists. The GPs, health visitors, social worker and research psychiatrists attended fortnightly meetings to discuss new referrals and progress of cases. Once experiment was established this evaluation was set up to assess the therapeutic value of the service</p> <p>Patients in intervention group had usual care plus one or all of the following:</p> <ol style="list-style-type: none"> 1. Recommendations to GP 2. Referral to local psychiatric or social services 3. Social support within practice 4. Consultation with research team psychiatrist 	
Outcomes	<p>Change in psychiatric rating (scale now known as GHQ 30)</p> <p>Change in social adjustment score (author scale)</p>	
Notes	<p>No power calculation was reported.</p> <p>Additional resources used included a social worker allocated to GP practice</p> <p>Involvement of two research team psychiatrists.</p> <p>Overall risk of bias was high.</p>	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

Cooper 1975 (Continued)

Allocation concealment (selection bias)	High risk	No randomisation. Control patients selected from other practices
Blinding (performance bias and detection bias) All outcomes	High risk	It does not appear that there was any blinding. Although assessors who treated patients did not assess those patients at follow-up there was no indication that psychiatrist was blind to study group
Incomplete outcome data (attrition bias) All outcomes	Low risk	Full outcome data.
Selective reporting (reporting bias)	Unclear risk	This study was conducted in the early 1970s and the protocol is not available
Other bias	High risk	Possible selection bias. Experimental cases were put forward in the hope that expert help might be given while the control patients were selected purely for research purposes
Randomisation adequately described/protected?	High risk	Non-randomised controlled study, not possible to randomise.
Protection against contamination?	Low risk	Contamination unlikely. Patients for the control group were drawn from separate practices without access to the experimental facility
Follow-up rate adequate?	Low risk	Follow-up rate >80% and balanced across both arms. Whilst the authors state that 86.8% of intervention and 84.3% of controls were successfully followed up, it is impossible to confirm this from the way the data are presented. It is equally impossible to say whether the authors conducted an ITT analysis
Reliable primary outcome measure?	Low risk	Standardised psychiatric interview which had been tested for inter-rater reliability. The psychiatric outcomes are measured using what has become a validated self-administered checklist: the General Health Questionnaire (GHQ-30). Social outcomes appear to be measured by a scale developed by one of the authors

Cooper 1975 (Continued)

Groups measured at baseline?	Low risk	Only sociodemographic baseline data were assessed for statistical differences between groups. Differences noted though none reached significance (but relatively small sample sizes). Relative excess of 60-65 year olds and social classes I and II in controls and small excess of retired persons and social classes IV and V in experimental group. Groups appeared well matched for psychiatric ratings
Appropriate choice of controls (CBA studies only)?	High risk	Control patients identified up to 18 months ahead of the intervention group. Cannot be certain that treatment/prognosis did not change during period though authors say no reason to believe that this was the case
Contemporaneous data collection (CBA studies only)?	Low risk	Data collected at one year in both groups.
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH

Coppins 2011

Methods	<p>A randomised controlled trial conducted over 2 years. Dates trial conducted not reported. Outcomes were measured at 6 (n=58), 12 (n=55), 18 (n=48) and 24 (n=46) months follow-up. However this was a cross-over trial with the intervention being delivered to one group in the first 12 months and the other group in the second twelve months</p> <p>Collaborating partners Lead agency: Health Strategic involvement (policy making and service planning): health, education, sport Commissioning (implementing strategy taking account of resources available): health, education, sport Operational (providing services directly): Community health, health promotion, education, sport Set in UK</p>
Participants	<p>65 participants (Intervention = 35; Control = 30) aged 6 to 14 years with a BMI above the 91st centile and who were able to participate in the intervention activities</p> <p>Participants were recruited from referrals from healthcare professionals (n=33) or by self-referral (n=32) as a result of media advertising via the local newspaper and television channel</p> <p>Sixty-five people were screened and all gave consent to participate. None were excluded on medical grounds that would affect their ability to participate in the activities</p> <p>Male 31.7% (intervention group), 30.0% (controls)</p> <p>Mean age 133.4 months (intervention group), 116.9 (controls)</p>

Interventions	Intervention consisted of two Saturday morning workshops (8 hours in total) in a school, 1 to 2 weeks apart, focused on healthy eating, physical activity, reducing sedentary behaviour, behaviour change and psychological well-being. In addition, two one-hour physical activity sessions per week during term-time through the year-long intervention period, consisting of junior gym sessions, bikes, circuits, trampolining, rock climbing, table tennis, basketball, tennis, badminton, football and the bleep test. Siblings aged 6 to 14 years and parents/guardians were also encouraged to participate The workshops were designed and delivered by a dietician, physical activity health promotion officer, an educational or clinical psychologist and physical activity instructors. The physical activity sessions were led by physical activity instructors. The control group received no input in the first year but crossed over in the second year to receive the full intervention and the original intervention group received no input in the second year	
Outcomes	Primary outcome measure was change in BMI SDS (BMI Z score). Secondary clinical outcomes were changes in waist circumference SDS (Z score), percentage body fat, lifestyle outcomes of diet composition and physical activity levels	
Notes	Intervention and control groups were not comparable at baseline. There was significant difference for age (p=0.007), height (p=0.011) and sum of skinfolds (p=0.018) Cost per child was estimated at £403 compared with £45 for usual care of 1.5 hours of individual dietetic consultations 4 participants in the intervention group were excluded after 12 months because they continued with the programme in the second year Attendance at the physical activity sessions was very low in both groups (mean attendance 24.1% 95% CI 15.4 - 32.9 in the group receiving the intervention in the first year and 31.7% in the group receiving the intervention in the second year Overall risk of bias was high	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	RCT but no detail given on method of randomisation
Blinding (performance bias and detection bias) All outcomes	High risk	Lead researcher was not blind to treatment allocation
Incomplete outcome data (attrition bias) All outcomes	Low risk	Primary outcome measures reported fully but not all secondary outcome measures
Selective reporting (reporting bias)	Low risk	All outcomes have been reported
Other bias	Unclear risk	Sixty percent of the group receiving the intervention in the first year were self referred compared to 36.7% of the control group

Coppins 2011 (Continued)

		The mean difference in age, with the intervention group significantly older than control group by 16 months, poses a risk of confounding as the age range includes the time of onset of puberty for many children, a time when body fat and BMI can change abruptly
Randomisation adequately described/protected?	High risk	Method not described
Protection against contamination?	Low risk	Though the participants allocated to wait for a year before receiving the intervention may have started to change their behaviours in the waiting period
Follow-up rate adequate?	Low risk	55/65 participants at cross-over at 12 months
Reliable primary outcome measure?	Unclear risk	Good outcome measure but disparate age of participant groups may make it less reliable in this trial
Groups measured at baseline?	High risk	Significant differences at baseline between the two groups
Appropriate choice of controls (CBA studies only)?	Unclear risk	N/A
Contemporaneous data collection (CBA studies only)?	Unclear risk	N/A
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERAL RISK OF BIAS WAS HIGH

Florence 2011

Methods	<p>An interrupted time series measuring violence recorded by the police and hospital admissions related to violence in a city between 2000 and 2007</p> <p>Collaborating partners Lead agency: Health Strategic involvement (policy making and service planning): secondary health care, local government, police Commissioning (implementing strategy taking account of resources available): secondary care, local government, police, ambulance, local licensees Operational (providing services directly): secondary care, local government, police, ambulance, local licensees Set in UK</p>
Participants	<p>Rates of violence reported to the Cardiff police and hospital admissions in Cardiff due to violence were recorded for the population of Cardiff (324,800 in 2001), surrounding areas and visitors. Data collection was monthly between 2000 and 2007.</p> <p>There were 33 months of observations before the programme was implemented and 51 months after implementation</p> <p>Changes in violence were also compared with 14 control cities classified as most similar by the Home Office (Birmingham, Bristol, Coventry, Derby, Leeds, Leicester, Lincoln, Newcastle upon Tyne, Northampton, Plymouth, Preston, Reading, Sheffield, Stoke on Trent)</p>
Interventions	<p>Cardiff Violence Prevention Programme was established to share data between agencies and use the information for violence prevention through targeted policing and other strategies. The multiagency violence prevention group was set up in 1997 and included city government (education, transport, licensing regulators) police, an emergency department consultant and an oral and maxillofacial surgeon, ambulance service and local licensees. The programme became operational in January 2003 with full data sharing between partners. Information from emergency department consultations and police intelligence data was combined to generate constantly updated violence hotspot maps and summaries of weapon use and violence type, classified to fit with national crime survey categorisation. Adjustments were made to police patrol routes, moving resources from the suburbs into the city centre at weekends, targeting problematic licensed premises and deployment of closed circuit television. Traffic flows and public transport were improved. Sections of the city centre where bars and nightclubs were concentrated were pedestrianised (2004). Plastic glassware was mandated in selected licensed premises (2005).</p> <p>The national crime recording standard was introduced police force by police force between 1999 and 2002 to increase and standardise reporting rates. It was introduced in the South Wales police force, incorporating the Cardiff area in April 2002</p>
Outcomes	<p>Health service records of hospital admissions related to violence and police recordings of woundings and less serious assaults</p>
Notes	<p>Additional resource was a data analyst to combine health and police data Changes were introduced sequentially through the life of the programme Overall risk of bias was unclear.</p>
<i>Risk of bias</i>	

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	Intervention and control populations unlikely to have been aware of formal study
Blinding (performance bias and detection bias) All outcomes	Low risk	Research team aware of status of intervention and control areas but routinely collected data (police reports and hospital activity) used to assess progress
Incomplete outcome data (attrition bias) All outcomes	Low risk	No evidence of incomplete data due to outcomes measured by routine data collection
Selective reporting (reporting bias)	Low risk	No evidence of selective reporting.
Other bias	High risk	Control cities selected to be similar in a range of sociodemographic and geographic factors which together are linked to levels of crime. Study design not an RCT and has an inherent risk of bias
Randomisation adequately described/protected?	High risk	No randomisation but the intervention city was compared to a range of other cities
Protection against contamination?	Low risk	Contamination unlikely. Intervention required 33 months to develop for the intervention city. No such time or resource was possible in the control cities
Follow-up rate adequate?	Low risk	Routinely collected population data used
Reliable primary outcome measure?	Low risk	Yes, routinely collected data
Groups measured at baseline?	Low risk	Good information pre-intervention
Appropriate choice of controls (CBA studies only)?	Unclear risk	N/A
Contemporaneous data collection (CBA studies only)?	Unclear risk	N/A
IS THE STUDY AT LOW RISK OF BIAS?	Unclear risk	Well conducted study. At low risk of bias for an ITS

Hultberg 2005

Methods	<p>Controlled before and after study with 12 months follow-up of 3 intervention sites and 4 control sites</p> <p>Collaborating partners Lead agency: Primary care. Strategic involvement (policy making and service planning): Primary health care, social services Commissioning (implementing strategy taking account of resources available): Primary health care, social services Operational (providing services directly): Primary health care, secondary health care, social services Set in Sweden.</p>
Participants	<p>138 participants with musculoskeletal disorder in Goteburg (107 attending DELTA intervention health centres and 31 attending control health centres outside the DELTA trial area) who completed 3 interviews at baseline, 6 months and 12 month follow-up</p> <p>Intervention group 36% male and 21% aged 16 - 30, 50% aged 31 - 50, 29% aged 51 - 65 years</p> <p>Control group 19% male and 25% aged 16 - 30, 65% aged 31 - 50, 10% aged 51 - 65 years</p>
Interventions	<p>Collaboration consisted of a co-financed collaborative care model to intensify rehabilitation through multidisciplinary teams (health centre physicians and nurses with occupational therapists, physiotherapists, social workers and social insurance officers) based in health centres. They had access to a joint budget from a common administrative body. They met weekly to discuss the rehabilitation of individual patients</p>
Outcomes	<p>Pain level measured by the Visual Analogue Scale (VAS)</p> <p>Long term or repeated sick leave</p> <p>Health-related quality of life measured through EuroQol 5 dimensions instrument (EQ-5D)</p>
Notes	<p>Power calculation was not reported but they aimed for a sample size of 450 patients. Smaller sample size achieved than aimed for despite study recruiting 8 months longer than planned. Potential for selection bias</p> <p>The total healthcare cost for an average patient in the intervention was 1979 Euro and 1286 Euro for the control group</p> <p>Overall risk of bias was high.</p>

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	Unlikely due to selection methods, as patients were recruited to intervention and control arms by their physicians, who would have been aware of their status
Blinding (performance bias and detection bias)	High risk	Unlikely that assessments were conducted blind due to study design. Some assess-

Hultberg 2005 (Continued)

All outcomes		ments were conducted in the intervention and control health centres
Incomplete outcome data (attrition bias) All outcomes	Low risk	Follow-up rates adequate.
Selective reporting (reporting bias)	High risk	Linked paper Hultberg 2002 (p 5), together these papers report on three projects from a wider set of 20 DELTA projects in Goteborg
Other bias	High risk	Low recruitment rate (aimed to recruit 450 but achieved 167). Control group small at 39 patients. P117, even though the planned recruitment period had been extended by 8 months, they only managed to recruit about half the targeted sample size. A large proportion of those invited declined to participate
Randomisation adequately described/protected?	High risk	Not randomised
Protection against contamination?	Low risk	Adequate as intervention delivered at health centres
Follow-up rate adequate?	Low risk	Follow-up rate 83% (84% in intervention and 79% in control group)
Reliable primary outcome measure?	Unclear risk	The authors concluded that this co-financing model was not associated with better patient outcome for patients with musculoskeletal disorders but the authors questioned their own findings. P122
Groups measured at baseline?	Low risk	P118 table2 Control group small compared to intervention group though groups appeared balanced at baseline. Not clear about recruitment process
Appropriate choice of controls (CBA studies only)?	Low risk	Adequate choice of control areas but low recruitment rates for controls
Contemporaneous data collection (CBA studies only)?	Low risk	Yes
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH

Kloek 2006

Methods	<p>Controlled before and after study over 2 years, September 2000 to September 2002</p> <p>Collaborating partners Lead agency: Municipal health. Strategic involvement (policy making and service planning): Local health planners, primary health care, social services Commissioning (implementing strategy taking account of resources available): No evidence of additional collaboration at this level Operational (providing services directly): Primary health care, health promotion, social services Set in Netherlands.</p>	
Participants	<p>Residents in deprived areas (population range 1800 - 6700) in Eindhoven 4800 residents aged 18-65 years from three intervention areas and three control areas received a postal questionnaire at baseline 2781 returned completed questionnaires at baseline (response rate 60%). 1929 returned questionnaires at 2 year follow-up (69% of respondents at baseline).</p>	
Interventions	<p>The programme “Wijkgezondheidswerk” consisted of two coalitions in the intervention areas (one coalition covered two intervention areas which bordered each other) led by the Municipal Health Services with representatives from social work, social welfare, city development department, a neighbourhood organisation representing residents, a general practitioner and researchers. Each coalition assessed the health needs of the neighbourhood to develop neighbourhood action plans related to determinants of health. Lifestyle intervention goals were focused to improve health related behaviour measured by self-reported fruit consumption, vegetable consumption, physical activity, smoking cessation and excessive alcohol consumption Examples of interventions include nutrition projects in primary schools, neighbourhood walking classes, gymnastic classes, quit smoking courses and large annual community events related to health.</p>	
Outcomes	<p>Primary aim was to improve health-related behaviours as measured by impact on fruit and vegetable consumption, physical activity, smoking and alcohol consumption. Intermediate aims were to assess health-related knowledge, attitudes and beliefs</p>	
Notes	<p>No power calculation was reported. The intervention was not delivered in full. Fifty-three activities were planned but only 43 were implemented. Some elements were delivered to children but only outcomes for adults were measured Expensive programme to implement, so additional service could explain any improvements rather than the collaboration itself. Overall risk of bias was high</p>	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	Not clear

Klock 2006 (Continued)

Blinding (performance bias and detection bias) All outcomes	Low risk	Researchers likely to be aware of status of participants but this is unlikely to have influenced the results as measurement was through postal questionnaire
Incomplete outcome data (attrition bias) All outcomes	Low risk	Adequate
Selective reporting (reporting bias)	High risk	All available data appear to be presented
Other bias	High risk	Intervention was not delivered in full. Elements were delivered to children but only outcomes for adults were measured. Expensive programme to implement so additional service could explain any improvements rather than the collaboration itself
Randomisation adequately described/protected?	High risk	Not randomised
Protection against contamination?	High risk	Assessed by authors "The process outcomes clearly showed some contamination of the comparison neighbourhoods, which is almost unavoidable because the comparison neighbourhoods were situated in the same city."
Follow-up rate adequate?	Low risk	>60% and balanced across both arms
Reliable primary outcome measure?	High risk	Self-reported behaviours and attitudes
Groups measured at baseline?	Low risk	Groups approximately balanced
Appropriate choice of controls (CBA studies only)?	Low risk	Yes
Contemporaneous data collection (CBA studies only)?	Low risk	Yes
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH

Methods	<p>Cluster-randomised trial of 3 years.</p> <p>Collaborating partners Lead agency: Local authority. Strategic involvement (policy making and service planning): Primary and secondary health care, health promotion, social services, environmental public protection services Commissioning (implementing strategy taking account of resources available): No evidence of additional collaboration at this level Operational (providing services directly): Primary and secondary health care, health promotion, social services, environmental public protection services, sport and leisure services, voluntary agencies Set in Australia.</p>																					
Participants	<p>16 out of 33 eligible local government authority areas in Victoria were matched into pairs. Women giving birth in these areas between 7 February 2000 and 5 August 2001 were sent postal questionnaires six months after the birth. Mothers whose infants had died were excluded</p> <p>Questionnaires were returned by 6248 mothers in intervention states (out of 10,471 mailed, 61.6% response rate) and 5057 mothers in control states (out of 8722 mailed, 60.1% response rate)</p> <p>Age range:</p> <table border="1" data-bbox="624 905 1034 1115"> <thead> <tr> <th></th> <th>Intervention group (%)</th> <th>Control group (%)</th> </tr> </thead> <tbody> <tr> <td>>20 yrs</td> <td>1.6</td> <td>1.1</td> </tr> <tr> <td>20 - 24</td> <td>9.2</td> <td>7.6</td> </tr> <tr> <td>25 - 29</td> <td>27.8</td> <td>26.3</td> </tr> <tr> <td>30 - 34</td> <td>37.9</td> <td>39.4</td> </tr> <tr> <td>>34</td> <td>21.5</td> <td>23.8</td> </tr> <tr> <td>Missing</td> <td>2.0</td> <td>1.8</td> </tr> </tbody> </table>		Intervention group (%)	Control group (%)	>20 yrs	1.6	1.1	20 - 24	9.2	7.6	25 - 29	27.8	26.3	30 - 34	37.9	39.4	>34	21.5	23.8	Missing	2.0	1.8
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>34	21.5	23.8																				
Missing	2.0	1.8																				
Interventions	<p>The trial followed the PRISM (Program of Resources, Information and Support for Mothers) approach. A small steering committee of key stakeholders (local government, GPs, Maternal and Child Health Nurses, community and consumer organisations) was locally appointed to coordinate the implementation of the intervention, supported by a community development officer (CDO) in each intervention community. Ideas were shared between the intervention states through newsletters and other communications. Clinical audits were conducted</p> <p>The intervention consisted of two components, one directed to primary care, the other to community services (local government and community agencies)</p> <p>Interventions were varied but included:</p> <ul style="list-style-type: none"> Education and training programmes for maternal and child health nurses and general practitioners Local co-ordination Mothers' Information Kits and vouchers Booklet developed by fathers for fathers Making environments more mother-and-baby friendly Befriending strategies for mothers through breaking down isolation and increasing opportunities to meet and make friends 																					
Outcomes	<p>EPDS, a 10-item scale for use in the postnatal period in which a score > 12 identifies probable depression</p> <p>SF36 physical and mental component scores at 6 months</p>																					

Notes	Power calculations suggested 2337 participants were needed in each arm but this was adjusted upwards to account for cluster randomisation design. Aimed to invite 9600 women to participate in each arm and achieved this for the intervention arm but not for the control arm, despite prolonging the recruitment period Additional resource requirements included employment and training of Community Development Officers and the production and distribution of information packs Overall risk of bias was low.	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Individual consent to participate was not requested so population (intervention group and control group) was not aware of the trial
Blinding (performance bias and detection bias) All outcomes	High risk	There was no blinding but outcome was not influenced by this
Incomplete outcome data (attrition bias) All outcomes	Low risk	Participant flow diagram given
Selective reporting (reporting bias)	Low risk	Results presented in full
Other bias	Low risk	
Randomisation adequately described/protected?	Low risk	Local government authorities were stratified into rural and metropolitan areas and all possible pair matches were identified. From these possible pair matches in each stratum one set of eight pairs of areas was randomly selected
Protection against contamination?	Low risk	Some in the comparison group received the information packs given to mothers in the intervention group but the relative impact of this would be small as the intervention included many other components
Follow-up rate adequate?	Low risk	Follow-up rate of women > 60% and balanced in both arms. No clusters were lost from the study
Reliable primary outcome measure?	Low risk	Validated measures used.

Lumley 2006 (Continued)

Groups measured at baseline?	Low risk	Sociodemographic profiles of intervention and control communities were presented (Table 1)
Appropriate choice of controls (CBA studies only)?	Unclear risk	Not applicable
Contemporaneous data collection (CBA studies only)?	Unclear risk	Not applicable
IS THE STUDY AT LOW RISK OF BIAS?	Low risk	OVERALL RISK OF BIAS WAS LOW

Melle 2008

Methods	<p>Controlled clinical trial started on 1 January 1997 with patient recruitment continuing to 31 December 2000. Patients diagnosed in intervention areas were followed up at 3 months, 1 year and 2 years after diagnosis</p> <p>Collaborating partners Lead agency: Mental health. Strategic involvement (policy making and service planning): Secondary health care Commissioning (implementing strategy taking account of resources available): Secondary health care and the Local Education Authority Operational (providing services directly): Secondary health care, social services and the Local Education Authority Intervention set in Norway and control areas in Norway and Denmark</p>
Participants	<p>Patients aged 18-65 years from four catchment areas (total population of 665,000) in Norway and Denmark, diagnosed with first-episode psychosis and meeting a range of inclusion criteria including DSM-IV diagnosis of psychotic disorder and IQ higher than 70</p> <p>380 people met the inclusion criteria (186 from Early Detection (ED) intervention area and 194 from the control areas). 281 agreed to participate (74% of all eligible patients, 141 in ED area, 140 in non-ED area)</p> <p>Male 69% (intervention), 66% (control)</p> <p>Mean age at study entry 26.4 (intervention) 30.7 (control).</p>
Interventions	<p>Mental health clinicians, nurses, psychologists, GPs, school staff and social workers delivered the Early Detection Programme, which consisted of two approaches</p> <p>Two specialist teams integrated into the ordinary outpatient units, providing rapid assessment of first episode patients, and raising awareness through visiting schools, working with GPs and the media</p> <p>Community information campaigns about mental health directed at schools and the general population and general practitioners. Use was made of postcards, flyers, and car stickers and a booklet was sent to all the households</p>

Melle 2008 (Continued)

Outcomes	Primary outcome was to reduce the duration of untreated first episode psychosis Secondary outcomes included assessment of symptom levels through the PANSS scores and level of functioning through the Global Assessment of Functioning scores	
Notes	Power calculations suggested they required 100 participants in each group, which they achieved Joa paper in Schizophrenia Bulletin 34, 466 - 472, 2008 looked at position after information campaign had ceased. Authors note possibility of assessment bias as clinical ratings of PANSS interviews were not masked Additional resources would be required to replicate this service Overall risk of bias was medium	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	Not clear if participants were aware at recruitment
Blinding (performance bias and detection bias) All outcomes	High risk	Clinical assessments for symptoms and function were not performed blind
Incomplete outcome data (attrition bias) All outcomes	Low risk	All available data appears to be presented.
Selective reporting (reporting bias)	High risk	There is full reporting of the outcomes they claimed to have measured but the study is due to run for up to 10 years. Data is reported for here only for the 2 year follow-up Joa paper reported on 2 cohorts 1997-2000 and 2000-2004.
Other bias	High risk	Different reports of the same work have different age groups for the subjects (15 - 65 in Johannessen, 16 - 65 in Melle 2005, 18 - 65 in Melle 2004) Also, there may be differences in disease severity between people identified early and people identified late with psychosis. Those identified early may have less severe underlying disease and be more likely to make good progress on treatment
Randomisation adequately described/protected?	High risk	Not randomised

Melle 2008 (Continued)

Protection against contamination?	Low risk	Intervention delivered in discrete geographical areas
Follow-up rate adequate?	Low risk	Rate > 60% and balanced across both arms (Melle 2004 pg. 145 Table 2)
Reliable primary outcome measure?	Low risk	Stated in the Johannessen paper page 41, to reduce duration of untreated psychosis and therefore improve course and outcome of illness
Groups measured at baseline?	Low risk	Groups approximately balanced
Appropriate choice of controls (CBA studies only)?	Unclear risk	Not applicable
Contemporaneous data collection (CBA studies only)?	Unclear risk	Not applicable
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS MEDIUM

Rosen 2006

Methods	<p>A cluster randomised controlled trial.</p> <p>Initially developed in the spring of 1999, and piloted in the 1999-2000 school year, the main study was run during the 2000-2001 school year, with the intervention delivered January to March 2001 and follow up two to three times to June 2001. In a concurrent subtrial, the families of children in the intervention preschools were individually randomised to home intervention group or home control group to test the impact of a home intervention</p> <p>Collaborating partners</p> <p>Lead agency: Public health</p> <p>Strategic involvement (policy making and service planning): Local public health department, Ministry of Health, Hadassah Medical Organization, Ministry of Education, Effrata Teachers' College, Preschool Department of the Municipality of Jerusalem</p> <p>Commissioning (implementing strategy taking account of resources available): public health, teachers, preschools</p> <p>Operational (providing services directly): public health, teachers, preschools, doctors, educational experts, school nurses</p> <p>Set in Israel.</p>
Participants	<p>40 preschools (20 intervention, 20 control), stratified by sector (religious and secular) in the state-run public system of the Jerusalem region, including 1029 toilet-trained children, aged 3 and 4. 73,779 child days were yielded from observations on 6 baseline and 66 study days. In a concurrent subtrial, the 469 families of children in the intervention preschools were randomised to receive a home component (intervention group 237</p>

	<p>families, controls 232 families)</p> <p>Preschool teachers likely to comply with the trial protocol were recommended by Ministry of Education officials (60% of eligible teachers). Nearly 90% of those invited agreed to join</p>
Interventions	<p>The preschool educators were given lectures, printed materials and experiential learning. The children were encouraged to wash their hands for at least 10s by singing a hand-washing song. They also had puppet theatre, a self-reward system, games, posters, puzzles, a video and presentations by school nurses. Environmental interventions included providing each classroom with liquid soap dispensers, paper towel dispensers, cup racks, liquid soap, paper towels (instead of cloth towels) and individual cups (instead of communal cups) over a three month period. Equipment was provided and fitted to ensure all intervention schools had the same facilities at the start of the intervention</p> <p>Control preschools had no input until the close of the study period, when the full intervention was delivered on site and they were followed up once after the intervention</p> <p>The home component consisted of a video, card and magnet sent home with the children in individually labelled packages about one month after the launch of the intervention.</p> <p>The home component control families received materials related to toothbrushing</p>
Outcomes	<p>The primary outcome measure was illness absence from preschool. Absences were recorded via telephone using a structured questionnaire. They were classified as due to illness, for unknown reason or for reason unrelated to illness. Where the reason for absence was unknown parents were contacted to clarify the reason</p> <p>Secondary outcomes were the overall percentage of children washing hands with soap before eating lunch and after bathroom use. Handwashing was measured from 3 post-intervention visits to the 20 intervention preschools between January and June 2001 and 1 post-intervention visit to the 20 control preschools in June 2001. In total there were 6 days collecting baseline measurements and 66 study days, yielding 73,779 child days of observation</p> <p>Preschools were grouped into religious and secular subgroups within the intervention and control groups for comparative analysis</p> <p>88% of teachers and 95% of parents agreed to participate.</p> <p>No preschools dropped out from the study. Drop-out of children was 0.9%, and 0.7% were lost to follow-up</p>
Notes	<p>The teachers invited to deliver the programme were identified by Ministry of Education officials. 60% of all eligible teachers were suggested, of which nearly 90% agreed to take part.</p> <p>Additional resources included lectures for the teachers, environmental equipment for the preschools, educational resource packs and puppet theatre visits. For the home intervention there were information packages. Teachers needed to spend time reinforcing hand hygiene messages with the children</p> <p>Fidelity of the programme was assessed as good but imperfect. Contamination of the control group was minimal</p> <p>Two intervention preschools were unexpectedly exposed to raw sewage during the study but results were unchanged following sensitivity analysis excluding these preschools</p> <p>Overall risk of bias was high.</p>
<i>Risk of bias</i>	

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Parents and field research staff were not aware
Blinding (performance bias and detection bias) All outcomes	Low risk	Educators, parents and field research staff were not informed of the study design but sometimes became aware that the programme was being run in a certain school.
Incomplete outcome data (attrition bias) All outcomes	Low risk	All data appears to be presented
Selective reporting (reporting bias)	High risk	The educators consistently under-reported absenteeism. The research team conducted surveys which showed that 28% of absences reported by parents were not reported by educators. (ref)
Other bias	High risk	Potential selection bias as the teachers' were put forward by Ministry of Education officials rather than volunteering or all eligible teachers being directly approached
Randomisation adequately described/protected?	Low risk	Used computer generated random numbers
Protection against contamination?	Low risk	Contamination assessed as minimal. Intervention delivered through discrete pre-schools
Follow-up rate adequate?	Low risk	No schools dropped out. 0.9% children dropped out and 0.7% were lost to follow-up.
Reliable primary outcome measure?	High risk	It was hard to assess which absences were due to illness and educators consistently under-reported absences when compared to parent's reports
Groups measured at baseline?	Low risk	Groups approximately balanced.
Appropriate choice of controls (CBA studies only)?	Unclear risk	N/A
Contemporaneous data collection (CBA studies only)?	Unclear risk	N/A

Rosen 2006 (Continued)

IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH
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Smylic 2008

Methods	<p>A controlled before after trial run in schools (3 study and 3 control) in February 2005 and evaluated one month following the end of the programme</p> <p>Collaborating partners Lead agency: Health Strategic involvement (policy making and service planning): public health, education, community organisations Commissioning (implementing strategy taking account of resources available): public health, education, community organisations Operational (providing services directly): secondary care health professionals, local authorities (teachers, social services) community organisations, peers Set in Canada</p>
Participants	<p>427 Grade Nine students from six public schools participated in the programme, of which 240 (intervention = 124; control = 116) who had parental consent took part in the evaluation</p> <p>Public schools in Windsor-Essex County, Ontario were invited to participate and six principals responded. Three schools were designated as intervention and three as controls Male 138 (42% intervention group, 74% control group)</p>
Interventions	<p>The intervention extended aspects of the basic sex education curriculum to cover areas in more depth. The in-school classed- based learning consisted of a five-session sexual health education programme covering anatomy and physiology of the reproductive system, STIs, HIV, building safe and healthy relationships and a teen panel discussion with personal stories from a teen mom, a teen dad and an HIV positive individual. The sessions were delivered by a public health nurse, a health promoter from the local AIDS Committee and a social worker from the local Sexual Assault Crisis Centre. A newsletter on teens interacting with parents about sexuality was distributed to parents and students and a workshop was run for parents to help them become more confident and approachable to their children in discussing matters of sexual health with them. Concerns and questions raised by the students through the course were incorporated directly into the programme and questions posted anonymously in a question box were answered daily through the programme</p> <p>The programme was run in the intervention schools in February 2005 and evaluation completed by April 2005, following which the intervention was implemented in the control schools.</p> <p>Baseline was measured in the intervention and control groups at the same time and immediately before the start of the programme</p>
Outcomes	<p>Outcomes were measured one month after the end of the programme. Follow-up data was obtained on 117 intervention and 116 control group students. However, results for the intervention group are only presented for the 95 students (81%) who reported attending at least one of the five classes</p> <p>There were no primary outcomes on behaviour change.</p>

	Secondary outcomes known to be associated with behaviour change were measured including knowledge of STI and HIV prevention, effectiveness and correct use of contraceptives, risks of pregnancy (22 items); birth control attitudes (four items); contraceptive agency (four items); communication with others (six items); awareness of sexual response (three items); sex role attitudes (four items); sexual interaction values (five items)	
Notes	<p>The method of allocation of schools is not given.</p> <p>The total number of schools invited to participate is not given</p> <p>22 intervention group students responding to the follow-up questionnaire reported not attending any class-based sessions and their data are omitted from the results. However, the intervention included newsletter and workshop for the parents, which may have had an impact on those students who had not attended any class-based sessions.</p> <p>The routine sex education curriculum is usually delivered by physical education teachers and varied in time spent and style of delivery, whereas the intervention programme was highly structured</p> <p>Overall risk of bias high</p>	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No concealment
Blinding (performance bias and detection bias) All outcomes	Low risk	No blinding at assessment but questionnaires were completed by students themselves so lack of blinding is unlikely to have affected the results
Incomplete outcome data (attrition bias) All outcomes	High risk	Results for all items appear to be presented. As 95 of the 117 intervention students responding at follow-up (81%) indicated that they had attended at least one class (78 attended all five classes), follow-up results are only presented for these 95, not the full 117, though their results were available
Selective reporting (reporting bias)	High risk	Follow-up data on 22 students in the intervention group were not reported as they had not attended any class-based sessions
Other bias	Low risk	Good overall follow-up rate and high rate of attendance at classes
Randomisation adequately described/protected?	High risk	Not randomised
Protection against contamination?	Low risk	Intervention delivered in selected schools.
Follow-up rate adequate?	Low risk	Adequate

Smylie 2008 (Continued)

Reliable primary outcome measure?	High risk	No primary outcome measure was possible as it was seen to be inappropriate to include questions on actual student sexual behaviour so measures associated with behaviour change were used.
Groups measured at baseline?	Low risk	Yes
Appropriate choice of controls (CBA studies only)?	Low risk	Yes
Contemporaneous data collection (CBA studies only)?	Low risk	Yes
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH

Tucker 2006

Methods	<p>Controlled before and after study. Data were collected at baseline (2001) and two years later (2003)</p> <p>Collaborating partners Lead agency: Local health board. Strategic involvement (policy making and service planning): Health Board Commissioning (implementing strategy taking account of resources available): Health Board and the Local Education Authority Operational (providing services directly): Health promotion, Local Education Authority and voluntary agencies Set in UK.</p>
Participants	<p>Secondary school Year 3 and 4 students (average age 14 years and 6 months) from all 10 Healthy Respect SHARE schools in Lothian region (intervention schools) and 5 comparison schools in Grampian region, with standard sexual health education programmes</p> <p>In 2001 of 5237 eligible children 2760 (80%) responded in Lothian and 1564 (87%) responded in Grampian</p> <p>In 2003, of 5193 eligible children 2796 (83%) responded in Lothian and 1583 (86%) responded in Grampian</p>
Interventions	<p>Ten schools implemented the Sexual Health And Relationships Education (SHARE) project developed as part of the <i>Healthy Respect</i> programme through a partnership between health, education and voluntary sector agencies in the Lothian Health Board region. The programme involved multidisciplinary staff training, planned multidisciplinary classroom delivery by teachers and nurses, alongside access to sexual health services at drop-in centres for pupils located in or close to schools</p>
Outcomes	<p>Primary outcomes were self-reported sexual intercourse at <16 years, and knowledge, attitudes and intentions about sexually transmitted diseases and condom use:</p> <ul style="list-style-type: none"> • knowledge that sexually transmitted infections (STI) might be asymptomatic

	<ul style="list-style-type: none"> • belief that condom use reduces the chance of contracting an STI • belief that condoms are effective in preventing HIV/AIDS • belief in planning protection from STIs before sex • no embarrassment about using a condom • no belief that condoms reduce sexual enjoyment • no belief that condoms are too expensive • self-efficacy: easy to get a condom • self-efficacy: easy to use a condom • intention to discuss use of condoms with partner • intention to obtain own condoms. 	
Notes	<p>Power calculations suggested they needed 2700 participants in the intervention schools and 1350 in the control schools, which they achieved</p> <p>Service provision was noted as patchy. Drop-in centres were available in Grampian, but were not linked to schools</p> <p>Evaluation report notes that a relatively small proportion of young people in the intervention (Lothian) catchment (about 20%) were actually exposed to it.</p> <p>Although the paper's title refers to Healthy Respect, it only looks at one aspect of this demonstration project: SHARE (Sexual Health and Relationships Education)</p> <p>The authors concluded that these findings raise questions about the likely and achievable sexual health gains for teenagers from school-based interventions</p> <p>It appears that phase 2 of this project is currently being evaluated. See interim report: http://www.healthscotland.com/uploads/documents/8835-Evaluation%20of%20HRPhase2Interim.pdf</p> <p>Exact costs unclear though additional costs for training and new drop-in centres</p> <p>Overall risk of bias was high</p>	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No concealment
Blinding (performance bias and detection bias) All outcomes	High risk	No blinding
Incomplete outcome data (attrition bias) All outcomes	Low risk	not applicable
Selective reporting (reporting bias)	Low risk	No published protocol but the paper is specific that changes were made following previous study and that pre-defined questions were used in the evaluation. Only 5/17 potential comparison schools agreed to participate and these may have been more confident in their sexual education services

Tucker 2006 (Continued)

Other bias	High risk	Authors note some limitations lack of classroom observation to explore the actual implementation of the new programme and possible selection bias arising from both volunteer schools in Lothian and low recruitment of schools in Grampian
Randomisation adequately described/protected?	High risk	not applicable
Protection against contamination?	Low risk	Some practices may have leaked to control schools.
Follow-up rate adequate?	Low risk	Follow-up at population level. Different students surveyed at each round (high school years 3 and 4 in 2001 and again in 2003) Response rate in first survey (2001) was 83% (80% in intervention schools and 87% in control schools) Response rate to the second survey (2003) was 84% (83% in intervention schools and 86% in control schools)
Reliable primary outcome measure?	Low risk	As good as could be arranged for this topic.
Groups measured at baseline?	Low risk	Groups not balanced.
Appropriate choice of controls (CBA studies only)?	High risk	Through no fault of the study team. Potential for selection bias. Only 5/17 potential comparison schools agreed to participate and these may have been more confident in their sexual education services. Some difference in baseline socio-demographic variables. Where differences were significant (e.g. accommodation, religion, parental education and employment) they were adjusted for in the multivariate models.
Contemporaneous data collection (CBA studies only)?	Low risk	No contemporaneous data collection is identified in the paper
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH

Vickrey 2006

Methods	<p>A cluster randomised controlled trial with enrolment from August 2001 to November 2002. Participants surveyed at baseline, 12 months and 18 month follow-up</p> <p>Collaborating partners</p> <p>Lead agency: Primary care.</p> <p>Strategic involvement (policy making and service planning): Primary health care, social services and voluntary agencies</p> <p>Commissioning (implementing strategy taking account of resources available): Primary health care, social services and voluntary agencies</p> <p>Operational (providing services directly): Primary health care, social services and voluntary agencies</p> <p>Set in United States of America.</p>
Participants	<p>18 primary care clinics in Southern California were randomly assigned to intervention (9) and usual care (9) clinics</p> <p>From the 18 primary care clinics 1043 patients were contacted. 91 were ineligible and 544 declined to participate or failed to respond. 408 patients with dementia aged 65 or older and receiving Medicare were enrolled with their caregivers (aged 18 or over) (Intervention 238 dyads; Control 170 dyads)</p> <p>Caregivers' overall survey response rates 88% at 12 months and 82% at 18 months, excluding caregivers of 54 patients who died before the 12 month survey</p> <p>Male 55.8% (intervention group) 54.1% (control group)</p> <p>Mean participants' age 80.1 years in intervention and control groups. Mean caregiver age 65.8 years in intervention group and 65.2 years in the control group</p>
Interventions	<p>A steering committee with physicians, leaders from community agencies, a community caregiver and the investigators identified 23 existing dementia guideline recommendations as care goals. They also designed a structured assessment, algorithms linking care management actions to assessment results and they established inter-organisation care coordination and referral protocols. Community agency care managers and healthcare care managers received the same formal training and used internet-based care management software system for monitoring care planning. Monthly meetings were held to refine care coordination</p> <p>Introduction of a disease management programme with active collaboration between health organisation and community agency staff providing support to patients with dementia and their carers. Care managers assessed patients at home and sent assessment summaries, problem list and selected recommendations to patients' primary care physicians and other designated providers</p>
Outcomes	<p>PRIMARY OUTCOME WAS NOT RELEVANT: The mean percentage of per patient guideline recommendations to which care was adherent</p> <p>Secondary health-related outcomes reported were in-study mortality, patient health-related quality of life (HRQoL) and use of cholinesterase inhibitors</p> <p>Caregiver health-related quality of life was also measured.</p>
Notes	<p>Power calculations suggested they needed 438 dyads, which they did not achieve</p> <p>It looks like significant additional resources were used in the intervention group, although it is unclear what costs were associated with this</p> <p>Overall risk of bias was medium</p>

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	Not concealed
Blinding (performance bias and detection bias) All outcomes	Low risk	As good as could be. Participants were blinded at baseline and not reminded of status at follow-up. Data abstractors were blinded Outcome assessment of medical record extraction also blind (unaware of participant clinic status or outcome measures) Carers were blinded for baseline survey.
Incomplete outcome data (attrition bias) All outcomes	Low risk	Unclear
Selective reporting (reporting bias)	Low risk	No reason to assume selective reporting but protocol added retrospectively. See http://www.controlled-trials.com/isrctn/pf/72577751
Other bias	Low risk	The authors report that the study sample well-educated, were predominantly white, had a usual source of care, and were not institutionalized. Therefore, the intervention may need to be modified for institutionalized patients and for those without a usual source of care and stable insurance
Randomisation adequately described/protected?	Low risk	Computerised clinical level cluster randomisation - "Within each health care organization, we paired clinics by patient volume; within each pair, we randomly assigned 1 clinic to the intervention and the other clinic to usual care using a computerized random-number generator operated by a study statistician."
Protection against contamination?	Low risk	No reason to think contamination has occurred.
Follow-up rate adequate?	Low risk	Rate > 80% and balanced across both arms. If deaths are excluded, follow-up (i.e. survey response rates excluding patients who died) at 12 months = 88% and at 18 months = 82%

Vickrey 2006 (Continued)

		Medical record follow-up was 97.5% .
Reliable primary outcome measure?	Low risk	Adequate measures of adherence to guideline with as many measures as possible (14/23) checked via patient record Note: primary outcome is irrelevant as it is not a health outcome Secondary outcomes relating to health are reliable.
Groups measured at baseline?	Low risk	Looks reasonably well balanced from Table 2. At baseline, intervention and usual care groups did not differ regarding patient and caregiver sociodemographic and clinical characteristics
Appropriate choice of controls (CBA studies only)?	Unclear risk	Not applicable
Contemporaneous data collection (CBA studies only)?	Unclear risk	Not applicable
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS MEDIUM

Woodfine 2011

Methods	<p>A randomised controlled trial. Recruitment period not stated. Follow-up 4 months and 12 months from randomisation (approx 3 and 11 months from intervention)</p> <p>Collaborating partners Lead agency: Public health Commissioning and strategic involvement: CHARISMA Study Group(Children's Health in Asthma Research to Improve Status by Modifying Accommodation) - Wrexham County Borough Council, Wrexham public health team (National Public Health Service Wales), Betsi Cadwaladr University Health Board and academia Operational: GPs identified families, Wrexham County Borough Council paid for and provided housing modifications. Family surveys and installation undertaken by Housing Officers Set in UK</p>
Participants	<p>192 children aged 5-14 years living in Wrexham, UK, registered with one of 20 participating GP practices, who had received ≥ 3 prescriptions of corticosteroid inhalers in the preceding year and with written consent from parent/guardian to take part, complete questionnaires, and allow access to child's medical records Children with Cystic Fibrosis, or who were likely to move away within 12 months or whose home had a ventilation system already installed and adequate central heating at pre-randomisation base line were all excluded Eligible: 445; recruited 195 (includes 3 siblings); 192 randomised: I = 96; C = 96</p>

Interventions	Installation of Vent-Axia HR200XL ventilation system in the roof space and improvement/replacement of central heating system if required; all delivered by local government Note: trial protocol indicates single room ventilation system if a single child but study report indicates that installation was in the roof space Control: Nothing. Wait list (12 months)
Outcomes	Month 4 (3 months post intervention): 173 [90%] I = 87; C = 86 Month 12 (11 months post intervention): 169 [88%] I = 88; C = 89. Parent-completed asthma-specific, physical and psychosocial subscores of PedsQL (a validated quality of life measure for children), Childrens' mean days off School over the study period for all causes and for asthma Cost effectiveness of intervention measured. Shift from 'severe' to 'moderate' asthma: I = 17% ; C = 3% Mean cost of modifications: £1718 per child treated or £12,300 per child shifted from 'severe' to 'moderate'. No significant difference in healthcare costs over 12 months between groups. 'Bootstrapping' gave an incremental cost-effectiveness ratio (ICER) of £234 per point improvement on the 100-point PedsQL™ asthma-specific scale (95% CI: £140 to £590). ICER fell to £165 (95%CI: £84 to £424) for children with 'severe' asthma
Notes	Study underpowered: power calculation required 200 children to detect a change in asthma-specific QoL of ≥ 0.4 of asthma-specific PedsQL. Study is a ventilation enhancement intervention and was not designed to explore the effect of local government and local health collaboration versus separate services. Thus it's unclear how much the study can contribute to answering the review question Significant additional resource required (see cost-effectiveness data above) Treatment fidelity: Yes, other than installing ventilation in roof space rather than for single room as stated in protocol Overall risk of bias: Low

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	Remote allocation concealment using contemporaneous dynamic randomisation
Blinding (performance bias and detection bias) All outcomes	Low risk	Blinded outcome assessment, although not possible to blind participants
Incomplete outcome data (attrition bias) All outcomes	Low risk	$\geq 88\%$ at each time point
Selective reporting (reporting bias)	Low risk	Unselective reporting - as per registered protocol: ISRCTN13912429
Other bias	Low risk	Randomisation and control children paired to avoid seasonal bias

Woodfine 2011 (Continued)

Randomisation adequately described/protected?	Low risk	Stratified randomisation well described.
Protection against contamination?	Low risk	Unlikely control families would have installed ventilation.
Follow-up rate adequate?	Low risk	Outcome data available for 88% at 12 months and balanced in both arms
Reliable primary outcome measure?	Unclear risk	Subjective data but validated tool (PedsQL)
Groups measured at baseline?	Low risk	Groups stratified. Significant difference between groups for social functioning
Appropriate choice of controls (CBA studies only)?	Unclear risk	Not applicable
Contemporaneous data collection (CBA studies only)?	Unclear risk	Not applicable
IS THE STUDY AT LOW RISK OF BIAS?	Low risk	OVERALL RISK OF BIAS WAS LOW

Young 2005

Methods	<p>Controlled clinical trial with historical controls recruited in two blocks (November 1998 -July 1999 and May - November 1999) and intervention patients recruited in later blocks (January - July 2001 and May - October 2001)</p> <p>Collaborating partners</p> <p>Lead agency: Health authority.</p> <p>Strategic involvement (policy making and service planning): Health planners, primary health care and social services</p> <p>Commissioning (implementing strategy taking account of resources available): Health planners, primary health care and social services</p> <p>Operational (providing services directly): Primary health care and social services</p> <p>Set in UK.</p>
Participants	<p>Patients living in three of five local Primary Care Trust areas around Leeds who had presented as emergency admissions to elderly care departments with falls, confusion, incontinence or immobility and who were still in hospital after 7 days were recruited by research nurses, aiming to recruit 50 per elderly care department per month</p> <p>848 intervention patients and 800 controls were recruited, of which 483 and 490 patients respectively were assessed for the primary outcome at 12 months. 333 patients in the intervention group (39%) and 301 in the control group (38%) had died by 12 months. Male 33% (intervention group) and 30% (control group).</p> <p>Median age at baseline 85 (intervention group) and 83 (control group)</p>

Interventions	Leeds Health Authority and Leeds City Council developed jointly a commissioning framework to provide support and rehabilitation to older patients following a health crisis at home or hospital admission, with care being given either at home or through short-term care home placements. A joint care management team (multi-agency, multidisciplinary) assessed need and purchased services from a Primary Care Trust based Intermediate Care team comprising nurses, therapists and social services staff Control patients received usual care.
Outcomes	Primary outcome was independence at 6 months post recruitment measured by the Nottingham Extended Activities of Daily Living (NEADL) score six months after recruitment Deaths and clinical outcomes, hospital and long-term care use were also measured
Notes	Power calculations suggested they required 600 analysable participants in each arm and they recruited 848 (intervention) and 800 (control) participants Overall seems to be a reasonable evaluation study of a very poorly implemented service so little can be concluded about effectiveness Only 29% intervention patients received the service and there was an apparent delay in service engagement as 44% of IC patients did not receive the service until more than 10 days after discharge. The authors suggest that close integration with other older peoples services, a factor considered important to successful intermediate care, has not been adequately achieved Appears to be reorganisation of existing resource rather than utilising additional resources Overall risk of bias was high

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	No concealment
Blinding (performance bias and detection bias) All outcomes	High risk	Historical control group. Statistician was independent of study group
Incomplete outcome data (attrition bias) All outcomes	Low risk	No incomplete outcome data
Selective reporting (reporting bias)	Low risk	Range of outcomes reported and no reason to suspect selectivity
Other bias	Unclear risk	Contemporaneous controls would have been better but groups appear to be well matched
Randomisation adequately described/protected?	High risk	Not applicable

Young 2005 (Continued)

Protection against contamination?	Low risk	Potential threat is introduction of Primary Care Trusts (PCTs) during the study but no reason to assume major differences
Follow-up rate adequate?	Low risk	Excellent follow-up of 97% in intervention and 96% in control group Note: Uses historical controls pre-dating the introduction of intermediate care
Reliable primary outcome measure?	Low risk	Well used Nottingham Extended Activities of Daily Living score
Groups measured at baseline?	Low risk	Groups approximately balanced. Historical controls and establishment of PCTs took place during recruitment process. Groups look well matched (Table 1) and no reason to assume major differences. The potential impact of seasonality was controlled for by recruitment at similar times of year
Appropriate choice of controls (CBA studies only)?	High risk	Not applicable
Contemporaneous data collection (CBA studies only)?	Low risk	Not applicable
IS THE STUDY AT LOW RISK OF BIAS?	High risk	OVERALL RISK OF BIAS WAS HIGH

Characteristics of excluded studies [ordered by study ID]

Study	Reason for exclusion
Aagaard 2011	Health outcome not measured in control group
Ahlner-Elmqvist 2004	Collaboration evident in both intervention and control groups
Anaya 2010	No local government involvement
Andersson 2009	No local government involvement
Applegate 1990	No collaboration with local government; Correspondence with the authors clarified that the social worker was a member of the health care team

(Continued)

Arbeit 1992	Heart Smart intervention versus no intervention. Does not explore the differential effects of local collaboration versus separate agency approach. Local health involvement unclear
Arean 2008	No collaboration with local government; social worker is a member of the health care team
Arifeen 2009	No local health involvement
Azad 2010	No local government involvement
Batty 2010a	No local government involvement
Batty 2010b	No local government involvement
Beatty 2010	No local government involvement
Beharie 2011	No local health involvement
Bell 2008	No local government involvement
Bellantonio 2008	No local government involvement
Benger 2008	No health outcomes
Blumenthal 2010	No local government involvement
Boisson 2009	No local government involvement
Bonner 2011	International collaboration delivered locally
Boult 2001	No collaboration with local government; social worker is a member of the health care team (Geriatric Evaluation and Management, GEM, model)
Bradford 2007	No local government involvement. Collaboration was between health agencies
Breyse 2011	Excluded study design - observational study
Brown 2009	Excluded study design - observational study
Buhrer-Skinner 2009	Excluded study design - prospective study
Burns 2000	No collaboration with local government; social worker a member of the health care team (Geriatric Evaluation and Management, GEM, model)
Buttner 2011	Uncontrolled study
Byford 1999	Intervention was enhanced single agency (social work) involvement. Level of partnership between health and local government cannot be determined

(Continued)

Campbell 2008	No local government involvement
Carrasquilla 2001	Excluded study design: before and after programme evaluation
Carruth 2010	No health outcomes data
Chan 2011	no local government involvement; collaboration between local health and national government
Chapman 2007	Collaboration evident in both intervention and control groups
Chaytor 2011	No local government involvement
Chen 2010	No local government involvement
Chomitz 2010	ITS without the minimum 3 points before and after intervention
Choudhry 2010	No local health involvement: collaboration between University of Chicago and schools
Cross 2009	No health outcome data
Dawes 2010	No local government involvement
Deschodt 2011	No local government involvement
Doyle 2010	No local government involvement
Droes 2000	Excluded study design: incomplete baseline data; unable to estimate drop-out rates
Eagle 1991	No collaboration with local government; social worker a member of the health care team
Edwards 2011	Exclude study design - an observational study
Eggert 1991	Collaboration evident in both intervention and control groups
Eisenmann 2011	Study protocol only. [Not added to the Studies in progress list as study is CBA without a minimum of 2 study and 2 control sites]
Ell 2010	No local government involvement
Eloniemi-Sulkava 2009	No health outcomes data
Evans 1995	No collaboration with local government; social worker a member of the health care team
Farber 2009	Excluded study design - observational study
Franzen-Dahlin 2008	No local government involvement

(Continued)

Freeman 2001	Study design: no baseline data since intervention already ongoing
Gagnon 2011	No local government involvement
Gatewood 2010	No local government involvement
Gayton 1987	No collaboration with local government; social worker a member of the health care team
Gilmer 2010	Excluded study design - retrospective cohort study
Guidotti 2009	CBA without a minimum of 2 study and 2 control sites
Hadid 2010	Excluded study design - retrospective case-control chart review
Harrington 2010	No local government involvement
Harris 1998	No collaboration with local government; social worker a member of the health care team
Helderman 1997	No collaboration with local health
Hendriks 2005	No collaboration with local government: multidisciplinary health team only
Hendriksen 1984	Nurse may involve local services if required following assessment, but no evidence of joint working arrangements and shared objectives
Hiscock 2008	No local government involvement
Hollar 2010	No local health involvement
House of Commons 2010a	No local government involvement
House of Commons 2010b	No local government involvement
Howden-Chapman 2011	No local government involvement
Johnson 1991	Collaboration evident in both intervention and control groups
Karppi 1995	Collaboration is within health agencies
Kelاهر 2009	CBA without a minimum of 2 study and 2 control sites
Killaspy 2006	Collaboration evident in both intervention and control groups
Kintner 2009	Collaboration unclear
Kumpusalo 1996	Excluded study design: no effective control group

(Continued)

Lambert 2010	Unclear if local government involvement
Landi 2001	Excluded study design: uncontrolled before and after study
Layne 2008	Collaboration evident in both study arms
Lee 2004	Follow-up rate < 60%
Liddle 2011	Collaboration between health and justice - no local government involvement,
Lowell 2011	No local government involvement
Luepker 1996	No collaboration with health agency
Mackintosh 2006	Level of partnership between health and local government cannot be determined
Magana-Valladares 2011	Excluded study design - not an intervention
Marcus 1998	No collaboration with local government. Intervention is delivered by a national service
Markle-Reid 2010	No local government involvement
Matsubayashi 2011	Excluded study design - cross sectional study
McConachie 2000	Excluded study design: no effective control group
McDonald 2009	Excluded study design - programme evaluation with no control group
McHugo 2004	No collaboration with local government; social worker is a member of the health care team
Meade 2010	No local government involvement
Miller K 2011	No local government involvement
Miller P 2011	No health outcome data
Murphy 2010a	Collaboration between local health and national Government
Murphy 2010b	Excluded study design - uncontrolled study
Murray 1997	Collaboration is evident in both intervention and control groups
Naglie 2002	No collaboration with local government; social worker a member of the health care team
Norberg 2010	Excluded study design - post-hoc evaluation based on observational data
Norman 2007	No health outcomes data

(Continued)

O'Brien 2010	Excluded study design - cross sectional analysis
O'Farrell 2010	Excluded study design - observational study
Oakes 2010	Excluded study design - post-hoc evaluation based on observational data
Pattanayak 2009	No health outcomes data
Piarroux 2009	No local government involvement
Post 2010	Excluded study design - observational study
Puska 2009	Excluded study design - observational study
Raja 2009	Excluded study design - uncontrolled study
Rees 2006	Excluded study design: CBA with only one control site
Reza-Paul 2008	No local government involvement
Richardson 2008	No local government involvement
Richardson 2010	No local government involvement
Rivera 2007	Collaboration in intervention and control groups
Robbers 2008	Excluded study design - uncontrolled study
Rog 2004	Study outcomes were not health-related
Rosenblum 2005	No local government involvement
Rosenheck 1999	Study outcomes not health-related
Rutter 2004	Collaboration evident in both intervention and control groups
Salihu 2011	Excluded study design - CBA without minimum of 2 study and 2 control arms
Scholten 1999	Level of partnership between health and local government cannot be determined
Selassie 2011	Excluded study design - cross sectional survey
Sexton 2011	No local health involvement
Shriqui 2008	No local government involvement

(Continued)

Singh 2009	No local government involvement
Smith 2010	No local government involvement
Sommers 2000	No collaboration with local government; social worker a member of the health care team
Stallard 2008	No local health involvement
Sytema 2007	No collaboration with local government; social worker a member of the health care team
Teufel-Shone 2005	Excluded study design: uncontrolled before and after study.
Thibault 2010	No local government involvement
Thornicroft 1998	Collaboration evident in both intervention and control groups
Tinetti 1994	No collaboration with local government in intervention group
Tourigny 2004	Follow-up rate < 60%
Tucker 2008	Exclude study design - no intervention
Tucker 2011	Excluded study design, CBA without a minimum of 2 intervention and 2 control sites
Van Assema 1994	Excluded study design - CBA without a minimum of 2 intervention and 2 control sites
Weingarten 1985	No collaboration with local government; social worker a member of the health care team
Wierdsma 2007	No health outcomes: service use only
Williams 2006	Excluded study design - uncontrolled study
Williams 2011	Excluded study design - uncontrolled study
Zayas 2004	Follow-up response rate <60%

Characteristics of ongoing studies *[ordered by study ID]*

Wall 2009

Trial name or title	Well London
Methods	Cluster RCT
Participants	20 matched pairs of intervention and control communities

Wall 2009 (Continued)

Interventions	
Outcomes	
Starting date	
Contact information	
Notes	ISRCTN68175121. Scheduled to complete in December 2012 Protocol: Wall M, Hayes R, Moore D, Petticrew M, Clow A, Schmidt E, Draper A, Lock K, Lynch R, Renton A. Evaluation of community level interventions to address social and structural determinants of health: a cluster randomised controlled trial. BMC Public Health. 2009 Jun 28;9:207

DATA AND ANALYSES

Comparison 1. Mortality

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Mortality	3	1994	Risk Ratio (M-H, Fixed, 95% CI)	1.04 [0.92, 1.17]

Comparison 2. Morbidity

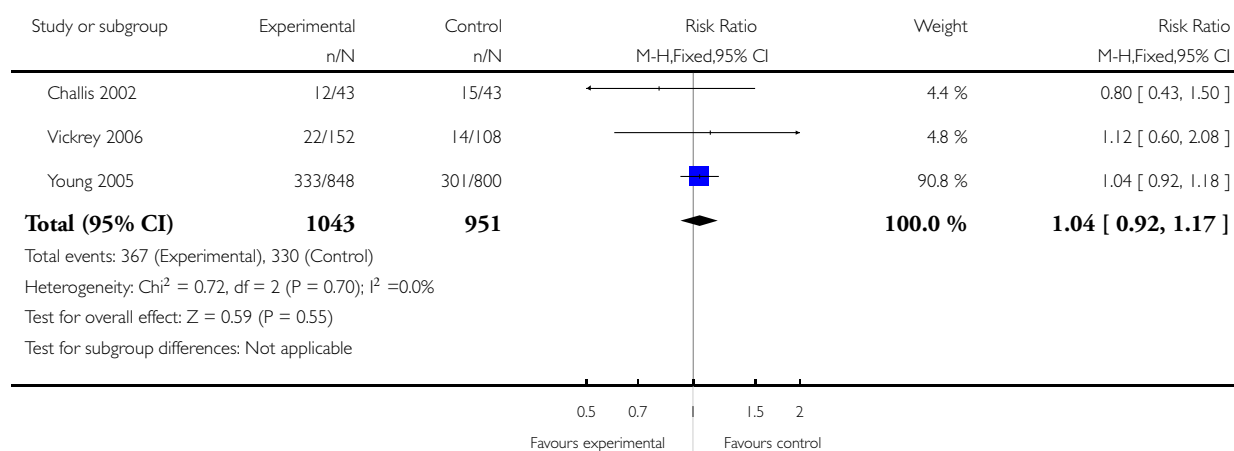
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Mental Health continuous	5	12060	Std. Mean Difference (IV, Random, 95% CI)	-0.28 [-0.52, -0.04]
2 Physical Health continuous	5	11388	Std. Mean Difference (IV, Random, 95% CI)	-0.01 [-0.10, 0.07]
3 Quality of Life	3	797	Std. Mean Difference (IV, Random, 95% CI)	-0.08 [-0.44, 0.27]
4 Global Assessment of Function symptoms score scale	2	600	Mean Difference (IV, Random, 95% CI)	-2.63 [-5.16, -0.10]

Analysis 1.1. Comparison 1 Mortality, Outcome 1 Mortality.

Review: Collaboration between local health and local government agencies for health improvement

Comparison: 1 Mortality

Outcome: 1 Mortality

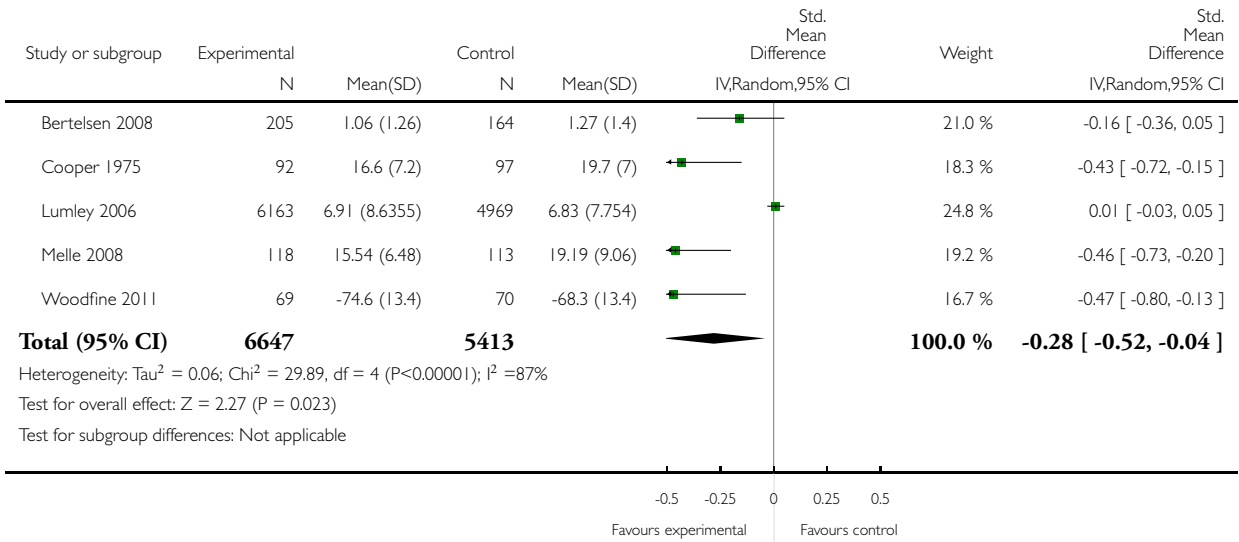


Analysis 2.1. Comparison 2 Morbidity, Outcome 1 Mental Health continuous.

Review: Collaboration between local health and local government agencies for health improvement

Comparison: 2 Morbidity

Outcome: 1 Mental Health continuous

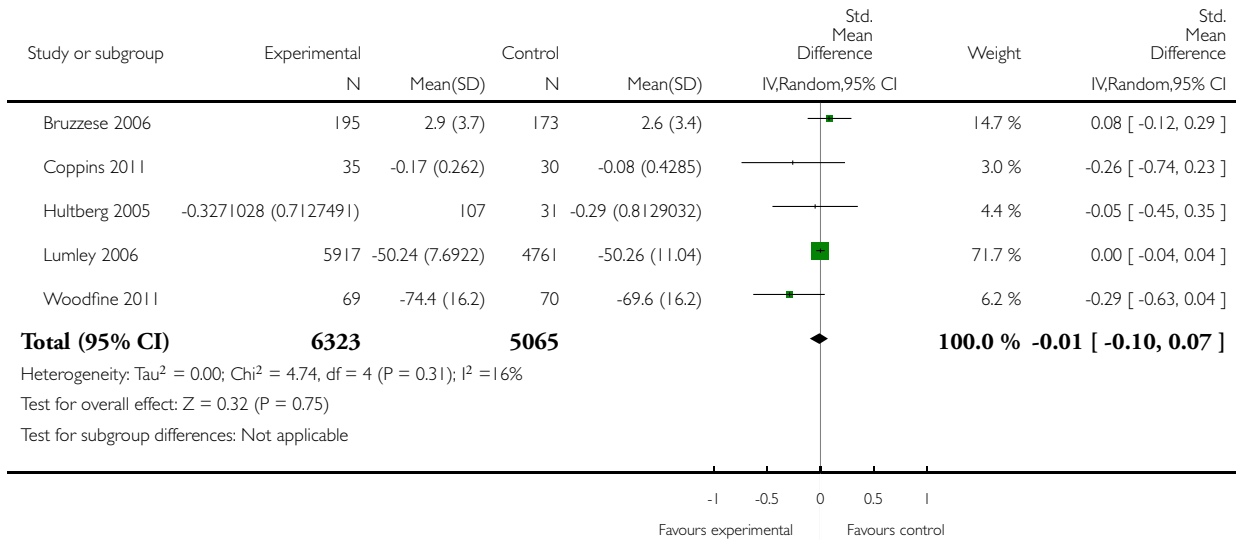


Analysis 2.2. Comparison 2 Morbidity, Outcome 2 Physical Health continuous.

Review: Collaboration between local health and local government agencies for health improvement

Comparison: 2 Morbidity

Outcome: 2 Physical Health continuous

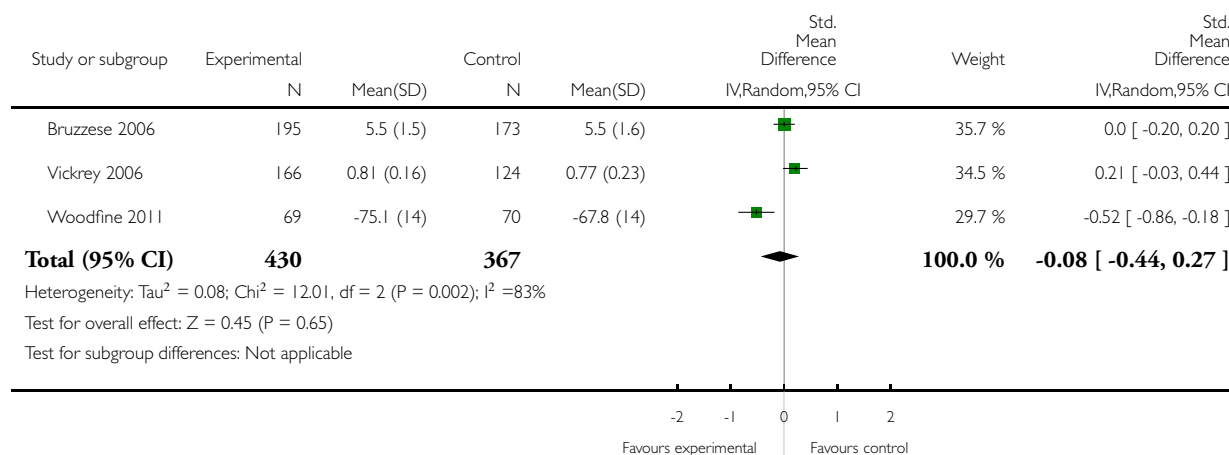


Analysis 2.3. Comparison 2 Morbidity, Outcome 3 Quality of Life.

Review: Collaboration between local health and local government agencies for health improvement

Comparison: 2 Morbidity

Outcome: 3 Quality of Life

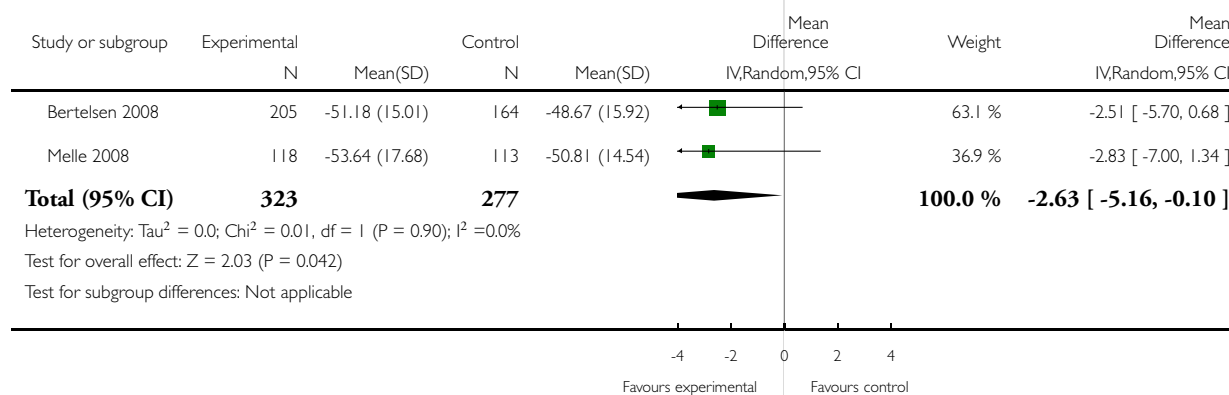


Analysis 2.4. Comparison 2 Morbidity, Outcome 4 Global Assessment of Function symptoms score scale.

Review: Collaboration between local health and local government agencies for health improvement

Comparison: 2 Morbidity

Outcome: 4 Global Assessment of Function symptoms score scale



APPENDICES

Appendix I. APPENDIX I. Validated tools

Barthel Index (BI) is a widely used measure of functional disability. The index was developed for use in rehabilitation patients with stroke and other neuromuscular or musculoskeletal disorders. Mahoney F, Barthel DW. Functional evaluation: the Barthel index. *Maryland State Med J* 1965; 14:615. [Young 2005](#)

Comprehensive Assessment and Referral Evaluation (CARE) covers a wide range of psychiatric, medical, and social problems. It has been, for certain purposes, reduced to a relatively brief instrument, the SHORT-CARE, that measures three major content areas: depression, dementia, and disability. Gurland B, Golden R, Tereesi J, Challop J. The Short-Care: An Efficient Instrument for the Assessment of Depression, Dementia and Disability. *Journal of Gerontology* 1984; 39:158-65. [Challis 2002](#)

Clifton Assessment Procedures for the Elderly (CAPE) is intended to assess level of disability and estimate need for care. It consists of a short cognitive scale and a behavioural rating scale. The latter has four sub-scales: physical disability, apathy, communication difficulties and social disturbance. Pattie A, Gilleard C (1979) *Manual of the Clifton Assessment Procedures for the Elderly*. Hodder & Stoughton: Sevenoaks. [Challis 2002](#)

Edinburgh Postnatal Depression Scale (EPDS) screening tool with 10-question to identify patients at risk for 'perinatal' depression. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: development of the 10-item Edinburgh Postnatal Depression Scale. *Br J Psychiatry* 1987; 150:782-6. [Lumley 2006](#)

EuroQol 5 dimensions instrument (EQ-5D) is a standardised instrument for use as a measure of health outcome. Dolan P (1997). Modeling valuations for EuroQol health states. *Med Care*, 35(11):1095-108. [Hultberg 2005](#)

Global Assessment of Functioning and Symptoms (GAF) a scale used to assess psychiatric status, ranging from 1 (lowest level of functioning) to 100 (highest level), can be split into GAFs (measuring symptoms) and GAFf (measuring function). American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition*. Washington, DC: American Psychiatric Association; 1987. [Bertelsen 2008](#), [Melle 2008](#)

GHQ-30 30-item General Health Questionnaire which provides a measure of the number of psychiatric symptoms reported. Goldberg DP, Williams P. A user's guide to the General Health Questionnaire. Windsor: NFER-NELSON, 1988. [Cooper 1975](#)

Hospital Anxiety and Depression score, (HAD) is a self screening questionnaire for depression and anxiety. Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. *Acta Psychiatr Scand* 1983; 67: 36171. [Young 2005](#)

Metabolic Equivalent of Task (MET) or the standard metabolic equivalent is a unit used to estimate the amount of oxygen used by the body during physical activity. Ainsworth BE, Haskell WL, Leon AS, Jacobs DR, Montoye HJ, Sallis JF, Paffenbarger RS. Compendium of physical activities: classification of energy costs of human physical activities. *Medicine and Science in Sports and Exercise* 1993;25: 7180. [Kloek 2006](#)

Nottingham Extended Activities of Daily Living, (NEADL) in the assessment of disability in chronic airflow limitation in old age. Nouri FM, Lincoln NB. An extended activities of daily living scale for stroke patients. *Clin Rehabil* 1987; 1:3015. [Young 2005](#)

Pediatric Asthma Caregiver's Quality of Life Questionnaire (PACQLQ) measures the problems that are most troublesome to the parents (primary caregivers) of children with asthma. Juniper EF, Guyatt GH, Feeny D, Ferrie PJ, Griffith LE, Townsend M. Measuring quality of life in the parents of children with asthma. *Quality of Life Research* 1996b; 5:2734. [Bruzzese 2006](#)

Pediatric Quality of Life Inventory generic core scales (PedsQL) measures quality of life in children. The generic module assesses physical health on one subscale (8 items); psychosocial health on 3 subscales; emotional (5 items); social (5 items) and school (5 items). The asthma module has four subscales: symptoms (11 items); treatment (11 items); worry (3 items) and communication (3 items). Varni JW, Burwinkle TM, Rapoff MA et al. The PedsQL in pediatric asthma; reliability and validity of the Pediatric Quality of Life Inventory generic core scales and asthma module. *J Behav Med* 2004; 27(3):297-318. [Woodfine 2011](#)

Positive and Negative Syndrome Scale (PANSS) is a medical scale used for measuring symptom severity of patients with schizophrenia. Kay SR, Fiszbein A et al (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin* 1987; 13:261-7. [Melle 2008](#)

Premorbid Adjustment Scale (PAS) is a widely used rating scale to assess premorbid functioning retrospectively. Cannon-Spoor H, Potkin SG, Wyatt RJ (1982) Measurement of premorbid adjustment in chronic schizophrenia. *Schizophrenia Bulletin*, 8:470-84. [Melle 2008](#)

Scale for the Assessment of Negative Symptoms (SANS) is a 35 item scale with a six point classification of answers. Mean symptom responses were calculated so the score ranges from 0 to 6. Andreasen NC: Negative symptoms in schizophrenia: definition and reliability. *Arch Gen Psychiatry* 1982; 39:784-8. [Bertelsen 2008](#)

Scale for the Assessment of Positive Symptoms (SAPS) is a 35 item scale with a six point classification of answers. Mean symptom responses were calculated so the score ranges from 0 to 6. Andreasen NC. The Scale for the Assessment of Positive Symptoms (SAPS). Iowa City, IA: The University of Iowa, 1984. [Bertelsen 2008](#)

Short Form 36 (SF-36) is a multi-purpose, short-form health survey with 36 questions of health-related quality of life Jenkinson C, Coulter A, Wright L. Short form 36 (SF-36) health survey questionnaire: normative data for adults of working age. *BMJ* 1993; 306: 1437-40. [Lumley 2006](#)

Visual Analogue Scale (VAS) is the standard tool for rating of pain either patients' own rating or rated by the health care worker. Gaston-Johansson F, Asklund-Gustafsson M (1985). A baseline study for the development of an instrument for the assessment of pain. *Journal of Advanced Nursing*, 10(6):539-46. [Hultberg 2005](#)

Appendix 2. APPENDIX 2. Search strategies

Database: **Ageline**

Subject Term: interagency cooperation; interdisciplinary team care; service coordination (exact match)

AND

Subject Term: service delivery; health services; health promotion; psychiatric services; public health services; day care services; emergency health services; nursing; health needs; alcoholism; drug abuse; hospice; palliative care; terminal care ; psychotherapy; case management; crisis intervention (exact match)

AND

Subject Term: government agencies; government services; service planning ; public housing; boarding and care homes; sheltered housing; nursing home care; homeless; home modification; (exact match)

AND Year: 1966-2008

AND Audience: Research/Academic

AND Document Type: Journal Article

Database: **AMED (Allied and Complementary Medicine)**

1. Public relations/

2. inter?institutional relation:.mp.

3. exp Interprofessional relations/

4. interprofessional: relation:.mp. or inter-professional: relation:.tw.

5. community institutional relations.mp.

6. exp Cooperative behavior/

7. (cooperative: behavior: or co-operative: behavior: or cooperative: behaviour: or co-operative: behaviour: or cooperative: plan:).mp. or co-operative: plan:.tw.

8. collaborat:.mp.

9. (cross-system: or cross system: or cross disciplin:).mp. or cross-disciplin:.tw.

10. interagenc:.mp. or inter-agenc:.tw.

11. interdisciplin:.mp. or inter-disciplin:.tw.

12. intersector:.mp. or inter-sector:.tw.

13. (joint: commission: or joint-commission: or joint: plan: or joint-plan: or joint: work: or joint-work: or joined up: or joined-up).mp. or jointness:.tw.

14. (multiagenc: or multi-agenc: or multidisciplin: or multi-disciplin: or multiprofessional: or multi-professional: or multi-sector:).mp. or multisector:.tw.

15. (partnership: or teamwork: or team work:).mp. or team-work:.tw.

16. (transdisciplin: or trans-disciplin:).mp.

17. (integrat: adj5 (work: or profession: or partnership: or team: or teamwork: or disciplin: or agenc:)).tw.

18. Public health/
19. Health administration/
20. health planning organizations.mp.
21. community health planning.mp.
22. Health services accessibility/
23. exp Home care services/
24. (health services needs and demand).mp. [mp=abstract, heading words, title]
25. Health planning/
26. exp Health promotion/
27. Health services/
28. "Delivery of health care"/
29. Community health services/
30. community health cent.:tw.
31. community care.mp. or continuing care.tw. or long term care.tw. or longterm care.tw. or long-term care.tw.
32. exp Health education/
33. exp Primary health care/
34. Comprehensive health care/
35. family physicians.mp.
36. Emergency medical services/
37. exp preventive health services/
38. nursing services.mp.
39. nursing/
40. public health nursing.mp.
41. Rehabilitation nursing/
42. Community health nursing/
43. health services for the aged.mp.
44. Rural health services/
45. indigenous health services.mp.
46. (indigenous and health service:).mp.
47. exp Mental health services/
48. Community mental health services/
49. exp Community mental health centers/
50. case management.mp.
51. community mental health team.mp.
52. crisis intervention.mp.
53. Psychotherapy/
54. adolescent health services.mp.
55. ((adolescent: or youth:) and health services).mp. [mp=abstract, heading words, title]
56. exp Child care/
57. child welfare.mp.
58. exp Child health services/
59. oral health.mp.
60. (teenage: or middle age: or middle-age: or old age: or elderly).mp. [mp=abstract, heading words, title]
61. exp Geriatrics/
62. exp palliative care/
63. exp Terminal care/
64. exp Long term care/
65. primary prevention.mp.
66. exp Rehabilitation/
67. Occupational therapy/
68. communicable diseases.mp.
69. ((outbreak: or infection:) adj control:).tw.
70. immunization program:.mp.

71. Mass screening/
72. exp Rehabilitation centers/ or rehabilitation centres.mp.
73. exp Nursing homes/
74. nursing hom:.tw.
75. Hospice care/
76. Day care/
77. Respite care/
78. exp Substance related disorders/ and rehabilitation.mp. [mp=abstract, heading words, title]
79. (mass media adj5 (health: or campaign: or scheme: or program: or project: or intervention: or strateg:)).tw.
80. health promot: school:.tw.
81. (health adj5 (promot: or scheme: or program: or project: or strateg: or scheme: or intervention:)).tw.
82. school nurs:.mp.
83. (speech and language therapist:).mp.
84. (family physician: or doctor: or nurse: or general practitioner: or GP or geriatrician: or health visitor: or dietician: or dietitian: or nutritionist: or physiotherapist: or occupational therapist: or therapist: or midwife).mp. or midwives.tw.
85. (dietitian: or dietician:).tw.
86. (community adj2 (program: or scheme: or project: or intervention: or strateg:)).tw.
87. Prenatal care/ or antenatal care.tw. or prenatal care.tw.
88. (postnatal care or post natal care).mp. [mp=abstract, heading words, title]
89. ((geriatric evaluation or geriatric assessment) and management).mp.
90. government agencies.mp.
91. local government.mp.
92. ((municipal: or city or town: or local: or education: or school:) adj5 (council: or authorit: or govern: or board:)).tw.
93. (government: adj5 (agenc: or plan: or polic: or strateg:)).tw.
94. Housing/
95. public housing.mp. or council housing.tw. or local authority housing.tw. or social housing.tw.
96. Residence characteristics/
97. housing for the elderly.mp.
98. Home care services/ or home care agencies.mp.
99. homes for the aged.mp.
100. exp Residential facilities/
101. sheltered housing.mp.
102. ((shelter: or half-way or half way) adj5 (hous: or home: or accommodat:)).tw.
103. Group homes/ or group home:.tw.
104. ((residential or nurs:) adj5 (home care or facilit:)).tw.
105. exp Nursing homes/
106. nurs: home:.mp.
107. ((foster or care) adj4 home:).tw.
108. (supported living or assisted living).tw.
109. exp homeless persons/
110. homeless:.tw.
111. exp social work/
112. exp social security/
113. exp social welfare/
114. (social: adj4 (work: or support: or security or care: or welfare: or service: or network:)).tw.
115. consumer advocacy.mp.
116. Counseling/
117. Civil rights/
118. Home care services/
119. Day care/ or day services.mp.
120. exp Substance related disorders/ and rehabilitation.mp.
121. Alcoholism/ and rehabilitation.mp. [mp=abstract, heading words, title]
122. Alcohol drinking/ and (prevention or control).mp.

123. exp Social behavior disorders/
124. Juvenile delinquency/
125. ((young or juvenile) adj2 offender:).tw.
126. (youth adj4 service:).tw.
127. ((leisure or community or youth or recreation:) adj2 (center: or centre:)).tw.
128. (play ground: or playground: or school yard: or schoolyard:).tw.
129. parks.mp. and recreation:.tw.
130. (housing and regeneration).mp.
131. ((neighbourhood or neighborhood) and (renew: or improv: or revitali?ation)).tw.
132. built environment.mp. or urban environment.tw.
133. ((child: or domestic: or partner: or spousal) adj3 (abuse: or violen: or protect:)).mp.
134. (foster home care or foster care).mp.
135. ((disabled persons or disabled people) and rehabilitation).mp. [mp=abstract, heading words, title]
136. home adaptation:.tw.
137. (local adj2 (council: or hous:)).tw.
138. play: field:.tw.
139. (school: adj2 (infant: or junior: or kindergarten or senior: or primary or comprehensive or grammar or high or elementary or secondary)).tw.
140. educational psychologist.mp. or Psychology educational/
141. ((environmental health or occupational health or housing or welfare rights or youth) adj5 (worker: or officer:)).tw.
142. public librar:.mp. or school teacher:.tw.
143. or/1-17 [collaboration]
144. or/18-89 [health]
145. or/90-142 [government]
146. and/143-145
147. Randomized controlled trials/
148. controlled clinical trial.mp.
149. intervention studies.mp.
150. experiment:.tw.
151. (time adj series).tw.
152. (pre test or pretest or (posttest or post test)).tw.
153. Random allocation/
154. impact.tw.
155. intervention?.tw.
156. chang:.tw.
157. evaluation studies.mp.
158. evaluat:.tw.
159. effect?.tw.
160. Comparative study/
161. or/147-160
162. 146 and 161
163. 146 and 161
164. limit 163 to yr="1966 - 2008"

Database: **ASSIA (Applied Social Sciences Index and Abstracts)**

Query: (((DE="collaboration") or(DE="partnerships") or(DE="team work") or(DE=("cooperation" or "cooperative behaviour")) or(DE=("integration" or "integrative approach" or "cooperation" or "cooperative behaviour")))) or(AB=(collaborat* or interagenc* or multiagenc*) or (inter-institutional* or inter-professional or inter-departmental*) or (interinstitutional* or interprofessional or interdepartmental*)) or((interprofessional relation*) or(inter-departmental) or(multidisciplin*) or("cross disciplin*") or(interagency)))

and(((DE=("public health" or "public health care" or "public health clinics" or "cooperation" or "cooperative behaviour")) or(DE=("community health" or "community health care" or "community health centres" or "community health services" or "community health workers" or "cooperation" or "cooperative behaviour")) or(DE=("home care" or "cooperation" or "cooperative behaviour" or "home based services")) or(DE=("health policy" or "home based services" or "home care")) or(DE=("behavioural health education" or "cooperation" or "cooperative behaviour" or "health policy" or "home based services" or "home care")) or(DE=("nurse practitioners" or "cooperation" or "cooperative behaviour" or "health policy" or "home based services" or "home care")) or(DE=("general practice" or "medicine" or "primary health care" or "practice nurses")) or(DE="preventive health care") or(DE=("mental health services" or "health services")) or(DE="paediatrics") or(DE="elderly people") or(DE="maternal health care" or "antenatal care")) or(DE="midwives" or "allied health professionals" or "community midwifery" or "dietitians" or "health visiting" or "occupational therapists" or "physiotherapists")) or(DE="health")) or(AB=(("family physician*") or doctor* or (general practitioner*)) or AB=(nurs* or ("School nurs*") or geriatrician*) or AB=((occupational therapist* or physiotherapist* or nutritionist*) or AB=(dietitian* or dietician* or ("health visitor*")) or AB=(therapist* or midwives or midwife) or AB=(("occupational therapist*") or physiotherapist* or ("respite care*")))) or(DE=("antenatal" or "hospices" or "nursing" or "postnatal care" or "rehabilitation" or "respite care")) and(((DE=("local government" or "government" or "district councils" or "local education authorities" or "metropolitan councils" or "minority local government" or "municipal government" or "social services departments")) or(KW=("municipal council* or municipal authorit* government agencies" or "public administration")) or((DE=("social security" or "social work" or "welfare")) or(DE=("residential homes" or "social housing")))) or(DE=("child care" or "disadvantaged people" or "foster care" or "homeless people")) or(AB=(leisure* or community or youth or recreation) NEAR (center* or centre*)) or(AB=(play ground* or playground* or school yard* or schoolyard)) or(AB=("built environment*" or "urban environment*")) or(AB=("educational psychologist*" or "occupational psychologist*")) or(AB=("environmental health" or "occupational health" or housing or "welfare rights" or youth) NEAR (worker* or officer*)) or(DE=("child care" or "disadvantaged people" or "foster care" or "homeless people")) or(DE=("community care" or "community centres" or "community colleges" or "community cooperatives" or "community development" or "community education" or "local communities")) or(DE=("day care" or "day care centres" or "day centres" or "day foster care" or "community colleges" or "community cooperatives" or "health centres"))))

Database: **CINAHL**

(MH "Interprofessional Relations+")

TX interdepartmental* relation* or inter-departmental* relation*

TX interprofessional* relation* or inter-professional* relation*

(MH "Community-Institutional Relations")

(MH "Cooperative Behavior")

TX cooperative* behavior* or TX cooperative* behaviour* or TX cooperative* plan* TX collaborat*

TX cross-system* or TX cross system* or TX cross disciplin* or cross-disciplin*

TX interagenc* or inter-agenc*
 TX interdisciplin* or inter-disciplin*
 TX intersector* or inter-sector*
 TX joint* commission* or TX joint-commission* or TX joint* plan* or TX joint-plan* or TX joint* work* or TX joint-work* or TX
 joined up* or TX joined-up or jointness*
 TX multiagenc* or TX multi-agenc* or TX multidisciplin* or TX multi-disciplin* or TX multiprofessional* or TX multi-professional*
 or TX multi-sector* or multisector*
 TX partnership* or TX teamwork* or TX team work* or team-work*
 TX transdisciplin* or TX trans-disciplin*
 integrat* N5 work*
 integrat* N5 profession*
 integrat* N5 partnership*
 integrat* N5 team*
 integrat* N5 teamwork*
 integrat* N5 disciplin*
 integrat* N5 agenc*
 (MH "Public Health")
 (MH "Public Health Administration")
 (MH "Health and Welfare Planning+/AM/MT/TD")
 (MH "Community Health Services+/AM/MT/TD")
 (MH "Health Services Accessibility/AM")
 (MH "Home Health Care+/AM/MA")
 (MH "Health Services Needs and Demand+/AM")
 (MH "Health Promotion+/AM/MA/MT")
 (MH "Health Services")
 (MH "Health Care Delivery/AM/MA/MT")
 (MH "Community Health Centers/AM/MA")
 TX community care or continuing care or long term care or longterm care or long-term care
 (MH "Community Health Services") or (MH "Health Education+/AM/MA/MT")
 (MH "Primary Health Care")
 (MH "Health Care Delivery+")
 (MH "Physicians, Family")
 (MH "Emergency Medical Services")
 (MH "Nursing Administration+")
 (MH "Community Health Nursing")
 (MH "Rehabilitation Nursing")
 TX community health nurs*
 (MH "Health Services for the Aged")
 (MH "Rural Health Services/AM/MA")
 (MH "Health Services, Indigenous")
 (MH "Mental Health Services+/AM/MA")
 (MH "Community Mental Health Services")
 TX community mental health cent*
 (MH "Case Management")
 community mental health team*
 (MH "Crisis Intervention")
 (MH "Psychotherapy/MT")
 (MH "Adolescent Health Services")
 (MH "Child Care+")
 (MH "Child Welfare+")
 (MH "Child Health Services+")
 (MH "Oral Health")
 (MH "Aged")

(MH "Geriatrics/MA/MT")
 (MH "Palliative Care/MT/NU")
 (MH "Terminal Care+/MT/NU")
 (MH "Long Term Care/MT/NU")
 (MH "Health Care Delivery/AM")
 (MH "Health Manpower+/MA")
 (MH "Rehabilitation+/AM/MA/MT/NU")
 (MH "Rehabilitation")
 (MH "Occupational Therapy")
 (MH "Communicable Diseases")
 control and (outbreak* or infection*)
 (MH "Immunization Programs/AM/MA/MT")
 (MH "Health Screening+/AM/MT")
 (MH "Rehabilitation Centers+")
 (MH "Nursing Homes+/AM/MA")
 nursing home*
 (MH "Hospice Care")
 (MH "Day Care")
 (MH "Respite Care")
 (MH "Substance Use Disorders+/RH")
 mass media N5 health*
 mass media N5 campaign*
 mass media N5 program*
 mass media N5 project*
 mass media N5 intervention*
 mass media N5 strateg*
 health promot* school*
 health N5 promot*
 health N5 scheme*
 health N5 program*
 health N5 project*
 health N5 strateg*
 health N5 scheme*
 health N5 intervention*
 TX "speech and language therapist*" or TX speech therapist*
 TX family physician* or TX doctor* or TX nurse* or TX general practitioner* or TX GP or TX geriatrician* or TX health visitor*
 or TX dietician* or TX dietician* or TX nutritionist* or TX physiotherapist* or TX occupational therapist* or TX therapist* or TX
 midwife or midwives
 community N2 program*
 community N2 scheme*
 community N2 project*
 community N2 intervention*
 community N2 strateg*
 (MH "Prenatal Care/AM/MA/MT")
 (MH "Postnatal Care/AM/MA/MT")
 TX geriatric evaluation and management
 welfare right* N7 health*
 (MH "Government Agencies")
 municipal* N5 council*
 municipal* N5 authorit*
 municipal* N5 govern*
 municipal* N5 board*
 city* N5 council*

city* N5 authorit*
 city* N5 govern*
 city* N5 board*
 town* N5 council*
 town* N5 authorit*
 town* N5 govern*
 town* N5 board*
 local* N5 council*
 local* N5 authorit*
 local* N5 govern*
 local* N5 board*
 education* N5 council*
 education* N5 authorit*
 education * N5 govern*
 education * N5 board*
 school* N5 council*
 school* N5 authorit*
 school* N5 govern*
 school* N5 board*
 government* N5 agenc*
 government* N5 plan*
 government* N5 polic*
 government* N5 strateg*
 TX housing
 (MH "Public Housing")
 (MH "Residence Characteristics")
 (MH "Housing for the Elderly")
 (MH "Home Health Agencies")
 (MH "Residential Facilities+/AM/MA/MT")
 (MH "Residential Facilities")
 shelter* N5 hous*
 shelter* N5 home*
 shelter* N5 accommodat*
 half-way N5 hous*
 half-way N5 home*
 halfway N5 hous*
 halfway N5 home*
 group home*
 residential N5 facilit*
 nurs* N5 facilit*
 residential N5 home care
 nurs* N5 home care
 (MH "Nursing Homes+")
 TX nurs* home*
 foster N4 home*
 care N4 home*
 supported living
 (MH "Homeless Persons")
 homeless*
 (MH "Social Work+")
 (MH "Economic and Social Security")
 (MH "Social Welfare+")
 social* N4 work*

social* N4 support*
 social* N4 security
 social* N4 care*
 social* N4 welfare*
 social* N4 service*
 social* N4 network*
 (MH "Consumer Advocacy")
 (MH "Counseling")
 (MH "Civil Rights")
 welfare rights
 domestic care
 day service
 (MH "Alcoholism/RH")
 (MH "Alcohol Drinking/PC")
 (MH "Social Behavior Disorders/NU/PC/RH")
 (MH "Juvenile Delinquency/PC/RH")
 youth offending team*
 young N2 offender*
 juvenile N2 offender*
 youth N4 service*
 leisure N2 centre
 community N2 centre
 youth N2 centre
 recreation* N2 centre
 leisure N2 center
 community N2 center
 youth N2 center
 recreation* N2 center
 play ground* or playground* or school yard* or schoolyard*
 TX parks and recreation*
 housing N2 regeneration
 neighbourhood N2 regeneration
 neighbourhood N3 renew*
 neighbourhood N3 improv*
 neighborhood N3 improv*
 neighborhood N3 revitalization
 TX social planning
 TX built environment* or urban environment*
 TX child* N3 violen*
 TX domestic* N3 violen*
 TX partner* N3 violen*
 TX spousal N3 violen*
 TX child* N3 abuse*
 TX domestic* N3 abuse*
 TX partner* N3 abuse*
 TX spousal N3 abuse*
 TX child* N3 protect*
 TX domestic* N3 protect*
 TX partner* N3 protect*
 TX spousal N3 protect*
 (MH "Foster Home Care")
 home adaptation*
 local N2 hous*

play* field*
 school* N2 infant*
 school* N2 junior*
 kindergarten
 school* N2 senior*
 school* N2 primary
 school* N2 comprehensive
 school* N2 grammar
 school* N2 high
 school* N2 elementary
 school* N2 secondary
 sixth form college*
 educational psychologist*
 occupational psychologist*
 environmental health N5 worker*
 occupational health N5 worker*
 housing N5 worker*
 youth N5 worker*
 occupational health N5 officer*
 housing N5 officer*
 welfare rights N5 officer*
 youth N5 officer*
 environmental health N5 officer*
 TX public librar*
 school teacher*
 or/1-23 [collaboration]
 or/24-105 [health]
 or/106-248 [government]
 and/249-251
 PT clinical trial
 (MH "Experimental studies+")
 experiment*
 time series
 pre test or pretest or posttest or post test
 (MH "Random Assignment")
 impact
 intervention?
 Chang*
 (MH "Evaluation Research")
 Evaluat*
 Effect?
 TX comparative study
 or/156-169
 170 and 155
 limit 171 to yr="1966 - 2008"

Database: **Cochrane Central Register of Controlled Trials (CENTRAL)**

- #1 MeSH descriptor Interprofessional Relations explode all trees
- #2 MeSH descriptor Cooperative Behavior, this term only
- #3 MeSH descriptor Community-Institutional Relations, this term only
- #4 (partnership* or teamwork* or collaborat* or team work* or team-work*.):ti,ab,kw
- #5 (#1 OR #2 OR #3 OR #4), from 1960 to 2008
- #6 MeSH descriptor Health, this term only

- #7 MeSH descriptor Public Health explode all trees
- #8 (family physician* or doctor* or nurse* or general practitioner* or GP or geriatrician):ti,ab,kw
- #9 Geriatrics or aged or "Child health" "adolescent health" or "child welfare":ti,ab,kw
- #10 (#6 OR #7 OR #8 OR #9), from 1960 to 2008
- #11 (#5 AND #10), from 1960 to 2008
- #12 MeSH descriptor Federal Government, this term only
- #13 MeSH descriptor City Planning explode all trees
- #14 MeSH descriptor Public Housing explode all trees
- #15 MeSH descriptor Social Welfare, this term only
- #16 MeSH descriptor Social Work, this term only
- #17 MeSH descriptor Residence Characteristics explode all trees
- #18 MeSH descriptor Geriatrics explode all trees
- #19 MeSH descriptor Child Care explode all trees
- #20 MeSH descriptor Occupational Health explode all trees
- #21 MeSH descriptor Respite Care explode all trees
- #22 MeSH descriptor Nursing Homes explode all trees
- #23 (city authorities):ti,ab,kw
- #24 (#12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #20 OR #21 OR #22 OR #23), from 1960 to 2008
- #25 (#11 AND #24)
- #26 (#5 AND #10 AND #24)

Database: **Cochrane Database of Systematic Reviews (CDSR)**

- #1 collaboration or team work or multidisciplinary in Cochrane Reviews
- #2 partnership* or teamwork* or team-work* OR multi-professional in Cochrane Reviews
- #3 Interprofessional Relations in Cochrane Reviews
- #4 Cooperative Behavior in Cochrane Reviews
- #5 Community-Institutional Relations in Cochrane Reviews
- #6 (#1 OR #2 OR #3 OR #4 OR #5), from 1966 to 2008
- #7 Health in Cochrane Reviews
- #8 Federal Government OR local government
- #9 Government agenc*
- #10 Public Housing or city planning
- #11 Residence Characteristics
- #12 (#8 OR #9 OR #10 OR #11)
- #13 (#6 AND #7 AND #12)

Database: Dissertation and Theses and Index to Theses database

Collaboration or partnership or teamwork AND Health AND local government or local council or local authority or municipal council or municipal authority or government agency

Database: **DoPHER (Database of Promoting Health Effectiveness Reviews)**

385	Freetext (item record) collaboration
386	Freetext (item record) "cooperative behavior"
387	Freetext (item record) "cooperative behaviour"
388	Freetext (item record) cooperative
389	Freetext (item record) co-operative

(Continued)

390	Freetext (item record) relations
391	Freetext (item record) "community-institutional "
392	Freetext (item record) community
393	Freetext (item record) community
394	Freetext (item record) institutional
395	393 AND 394
396	Freetext (item record) interdepartmental
397	Freetext (item record) "Interprofessional "
398	Freetext (item record) Interdisciplinary
399	385 OR 388 OR 389 OR 390 OR 395 OR 396 OR 397 OR 398

Database: **EMBASE**

1. Public Relations/
2. inter?institutional relation:.mp.
3. Interprofessional relations.mp.
4. interdepartmental: relation:.mp. or inter-departmental: relation:.tw.
5. interprofessional: relation:.mp. or inter-professional: relation:.tw.
6. Cooperation/
7. (cooperative: behavior: or co-operative: behavior: or cooperative: behaviour: or co-operative: behaviour: or cooperative: plan:).mp. or co-operative: plan:.tw.
8. collaborat:.mp.
9. (cross-system: or cross system: or cross disciplin: or cross-disciplin:).tw.
10. interagenc:.mp. or inter-agenc:.tw.
11. interdisciplin:.mp. or inter-disciplin:.tw.
12. intersector:.mp. or inter-sector:.tw.
13. (transdisciplin: or trans-disciplin:).mp.
14. (integrat: adj5 (work: or profession: or partnership: or team: or teamwork: or disciplin: or agenc:)).tw.
15. (welfare right: adj7 health:).tw.
16. (partner agenc\$ or partner department\$).tw.
17. ((behave or behaving or behaves or behaved) adj cooperative\$).tw.
18. (cooperativ\$ adj2 (work\$ or behavior?r or agenc\$)).tw.
19. (partnership adj3 (work\$ or cooperat\$ or plan\$ or relations or behavior?r or agenc\$)).tw.
20. (interdepartmental adj2 (work\$ or cooperat\$ or behavior?r)).tw.
21. (interprofessional adj2 (work\$ or cooperat\$ or behavior?r or agenc\$)).tw.
22. (cross sector\$ or cross?sector\$ or across sector\$).tw.
23. (multi department\$ or multidepartment\$).tw.
24. ((working or work or works or worked) adj together).tw.
25. Interdisciplinary communication/
26. jointness:.tw.

27. (work: adj5 (joint: commission: or joint-commission: or joint: plan: or joint-plan: or joint: work: or joint-work: or joined up: or joined-up)).mp.
28. (work: adj5 (multiagenc: or multi-agenc: or multidisciplin: or multi-disciplin: or multiprofessional: or multi-professional: or multi-sector: or multisector:)).tw.
29. (work: adj5 (partnership: or teamwork: or team work: or team-work:)).tw.
30. or/1-29
31. Public Health/
32. public health administration.mp. or Public Health Service/
33. Health Care Planning/
34. Health Care Delivery/
35. Home Care/
36. Health Promotion/
37. Health Service/
38. Community Care/
39. Health Center/
40. community care.mp. or continuing care.tw. or long term care.tw. or longterm care.tw. or long-term care.tw.
41. Health Education/
42. exp Primary Health Care/
43. comprehensive health care/
44. General Practitioner/
45. Emergency Health Service/
46. Preventive Health Service/
47. Nursing/
48. nursing services.mp.
49. Community Health Nursing/
50. rehabilitation nursing.mp. or Rehabilitation Nursing/
51. community health nurs:.mp.
52. Elderly Care/
53. Rural Health Care/
54. health services, indigenous.mp. or Health Service/
55. Mental Health Service/
56. Community Mental Health Center/
57. community mental health team.mp.
58. Crisis Intervention/
59. Psychotherapy/
60. exp Child Health Care/
61. exp Child Care/
62. exp Child Welfare/
63. Child Health/
64. Oral Health.mp. or Health/
65. Aged/
66. Geriatrics/
67. palliative care.mp. or Palliative Therapy/
68. Terminal Care/
69. Long Term Care/
70. Primary Prevention/
71. Rehabilitation/
72. Occupational Therapy/
73. Communicable Disease/
74. ((outbreak: or infection:) adj control:).tw.
75. Preventive Health Service/
76. Mass Screening/
77. Rehabilitation Center/

78. Nursing Home/
79. hospice care/
80. day care/
81. Respite Care/
82. *Addiction/rh [Rehabilitation]
83. (mass media adj5 (health: or campaign: or scheme: or program: or project: or intervention: or strateg:)).tw.
84. health promot: school:.tw.
85. (health adj5 (promot: or scheme: or program: or project: or strateg: or scheme: or intervention:)).tw.
86. (speech and language therapist:).mp.
87. (family physician: or doctor: or nurse: or general practitioner: or GP or geriatrician: or health visitor: or dietician: or dietitian: or nutritionist: or physiotherapist: or occupational therapist: or therapist: or midwife).mp. or midwives.tw.
88. dietitian:.tw.
89. (community adj2 (program: or scheme: or project: or intervention: or strateg:)).tw.
90. *Postnatal Care/
91. *Prenatal Care/
92. geriatric evaluation.mp. and management.tw.
93. or/31-92
94. government agencies.mp. or Government/
95. local government.mp. or Government/
96. ((municipal: or city or town: or local: or education: or school:) adj5 (council: or authorit: or govern: or board:)).tw.
97. (government: adj5 (agenc: or plan: or polic: or strateg:)).tw.
98. housing.mp.
99. Housing/
100. public housing.mp.
101. Demography/
102. Home for the Aged/
103. Home Care/
104. Residential Home/
105. ((shelter: or half-way or half way) adj5 (hous: or home: or accommodat:)).tw.
106. group home:.tw.
107. ((residential or nurs:) adj5 (home care or facilit:)).tw.
108. nurs: home:.mp.
109. ((foster or care) adj4 home:).tw.
110. supported living.tw.
111. Homelessness/
112. exp Social Work/
113. exp Social Security/
114. exp Social Welfare/
115. (social: adj4 (work: or support: or security or care: or welfare: or service: or network:)).tw.
116. Consumer Advocacy/
117. Consumer Advocacy/
118. Counseling/
119. Civil Rights/
120. welfare rights.tw.
121. domestic care.tw.
122. day service:.tw.
123. Substance-Related Disorders.mp.
124. *Alcoholism/rh [Rehabilitation]
125. *Drinking Behavior/pc [Prevention]
126. Alcohol Drinking.mp.
127. Social Behavior Disorders.mp. or Sociopathy/
128. Juvenile Delinquency/pc, rh [Prevention, Rehabilitation]
129. youth offending team:.tw.

130. ((young or juvenile) adj2 offender:).tw.
131. (youth adj4 service:).tw.
132. ((leisure or community or youth or recreation:) adj2 (center: or centre:)).tw.
133. (play ground: or playground: or school yard: or schoolyard:).tw.
134. parks.mp. and recreation:.tw.
135. ((housing or neighbourhood or neighborhood) adj2 regeneration).tw.
136. ((neighbourhood or neighborhood) adj3 (renew: or improv: or revitali?ation)).tw.
137. social planning.mp.
138. built environment:.mp. or urban environment:.tw.
139. ((child: or domestic: or partner: or spousal) adj3 (abuse: or violen: or protect:)).mp.
140. Foster Care/
141. Disabled Person/
142. home adaptation:.tw.
143. (local adj2 (council: or hous:)).tw.
144. play: field:.tw.
145. (school: adj2 (infant: or junior: or kindergarten or senior: or primary or comprehensive or grammar or high or elementary or secondary)).tw.
146. sixth form college:.tw.
147. educational psychologist:.tw.
148. occupational psychologist:.tw.
149. ((environmental health or occupational health or housing or welfare rights or youth) adj5 (worker: or officer:)).tw.
150. public librar:.mp. or school teacher:.tw.
151. (environment agenc: or transport agencies or transport departments or transport sector or housing agency).mp. or education department.tw.
152. or/94-151
153. 30 and 93 and 152
154. Randomized Controlled Trial/
155. Controlled Clinical Trial/
156. Intervention Study/
157. experiment\$.tw.
158. (time adj series).tw.
159. (pre test or pretest or (posttest or post test)).tw.
160. Randomization/
161. impact.tw.
162. intervention?.tw.
163. chang\$.tw.
164. Evaluation/
165. evaluat\$.tw.
166. effect?.tw.
167. comparative study.pt.
168. Comparative Study/
169. or/154-168
170. 153 and 169

Database: **ERIC (Education Resources Information Center)**

Query: ((KW=(random* or ("controlled trial" or "intervention stud*")) or KW=(experiment* or ("comparative stud*") or impact)) or(time NEAR series) or(pretest or posttest) or(randomised control trial) or(randomized control trial) or(DE=("comparative analysis" or "evaluation methods" or "intervention" or "longitudinal studies")) or(clinical trial) or(DE=("control groups" or "experimental groups" or "quasiexperimental design" or "comparative analysis" or "evaluation methods" or "intervention" or "longitudinal studies"))) and(((DE=("cooperation" or

"interaction" or "interdisciplinary approach" or "interprofessional relationship" or "participation" or "teamwork") or (AB=(collaborat* or interagenc* or multiagenc*) or (inter-institutional* or inter-professional or inter-departmental*) or (interinstitutional* or interprofessional or interdepartmental*)) and((DE=("immunization programs" or "child health" or "communicable diseases" or "community health services" or "disease control" or "epidemiology" or "internal medicine" or "preventive medicine" or "access to health care" or "aging individuals" or "child care" or "community services" or "dental health" or "dentistry" or "educational gerontology" or "geriatrics" or "gerontology" or "health" or "health activities" or "health personnel" or "health related fitness" or "health services" or "hygiene" or "medicine" or "mental disorders" or "mental health" or "mental health workers" or "nursing" or "older adults" or "physical health" or "psychotherapy" or "public health" or "rehabilitation" or "rehabilitation counseling" or "well being" or "wellness") or (AB=(("family physician*" or doctor* or (general practitioner*)) or AB=(nurs* or ("School nurs*" or geriatrician*) or AB=((occupational therapist*) or physiotherapist* or nutritionist*) or AB=(dietitian* or dietician* or ("health visitor*")) or AB=(therapist* or midwives or midwife) or AB=(("occupational therapist*" or physiotherapist* or ("respite care*")))) and((DE=("leisure education" or "recreational activities" or "recreational facilities" or "recreational programs" or "addictive behavior" or "alcoholism" or "ancillary school services" or "boarding schools" or "child care" or "child welfare" or "city government" or "community" or "community services" or "delinquency" or "disabilities" or "educational counseling" or "educational psychology" or "emergency shelters" or "facilities" or "foster care" or "government administrative body" or "government employees" or "group homes" or "housing" or "human services" or "institutions" or "municipalities" or "nursing homes" or "planning commissions" or "public agencies" or "regional planning" or "rehabilitation centers" or "residential institutions" or "residential programs" or "school districts" or "school psychology" or "social planning" or "social work" or "urban planning" or "welfare services") or (AB=(("play ground*" or playground* or schoolyard*) or AB=(("school yard*" or parks or ("built environment*"))))

Database: **HMIC (Health Management Information Consortium)**

1. PUBLIC RELATIONS/
2. INTERPROFESSIONAL RELATIONS/
3. interdepartmental relations/
4. interdepartmental: relation:.mp. or inter-departmental: relation:.tw.
5. interprofessional: relation:.mp. or inter-professional: relation:.tw.
6. INTERAGENCY RELATIONS/
7. (cooperative: behavior: or co-operative: behavior: or cooperative: behaviour: or co-operative: behaviour: or cooperative: plan:).mp. or co-operative: plan:.tw.
8. collaborat:.mp.
9. INTERAGENCY COLLABORATION/
10. (cross-system: or cross system: or cross disciplin:).mp. or cross-disciplin:.tw.
11. interagenc:.mp. or inter-agenc:.tw.
12. interdisciplin:.mp. or inter-disciplin:.tw.
13. intersector:.mp. or inter-sector:.tw.

14. (joint: commission: or joint-commission: or joint: plan: or joint-plan: or joint: work: or joint-work: or joined up: or joined-up).mp. or jointness:.tw.
15. MULTIDISCIPLINARY TEAMS/
16. MULTIDISCIPLINARY SERVICES/
17. (multiagenc: or multi-agenc: or multidisciplin: or multi-disciplin: or multiprofessional: or multi-professional: or multi-sector:).mp. or multisector:.tw.
18. TEAMWORK/
19. (partnership: or teamwork: or team work:).mp. or team-work:.tw.
20. (transdisciplin: or trans-disciplin:).mp.
21. (integrat: adj5 (work: or profession: or partnership: or team: or teamwork: or disciplin: or agenc:)).tw.
22. (welfare right: adj7 health:).tw.
23. WELFARE RIGHTS/ and health.tw.
24. PUBLIC HEALTH/
25. public health administration.mp.
26. exp HEALTH PLANNING/
27. community health planning.mp.
28. ACCESS TO HEALTH SERVICES/
29. (health services accessibility or access to health care).mp. [mp=title, other title, abstract, heading words]
30. home care services.mp. or exp HOME CARE/
31. (health services needs and demand).mp. [mp=title, other title, abstract, heading words]
32. HEALTH PLANNING/
33. exp HEALTH PROMOTION/
34. HEALTH SERVICES/
35. delivery of health care.mp.
36. COMMUNITY HEALTH SERVICES/
37. (community health centers or community health centres).mp. [mp=title, other title, abstract, heading words]
38. community care.mp. or continuing care.tw. or long term care.tw. or longterm care.tw. or long-term care.tw.
39. COMMUNITY CARE/
40. exp HEALTH EDUCATION/
41. exp PRIMARY CARE/
42. comprehensive health care.mp.
43. family physicians.mp.
44. emergency medical services.mp. or EMERGENCY HEALTH SERVICES/
45. PREVENTIVE MEDICINE/ or preventive health services.mp.
46. exp PREVENTIVE MEDICINE/
47. nursing services.mp.
48. exp NURSING/
49. (public health and nursing).mp. [mp=title, other title, abstract, heading words]
50. (rehabilitation and nursing).mp. [mp=title, other title, abstract, heading words]
51. COMMUNITY NURSING/
52. COMMUNITY PSYCHIATRIC NURSING/
53. (health services for the aged or health services for the elderly).mp.
54. RURAL HEALTH SERVICES/
55. (indigenous and health services).mp. [mp=title, other title, abstract, heading words]
56. exp MENTAL HEALTH SERVICES/
57. COMMUNITY MENTAL HEALTH SERVICES/
58. exp COMMUNITY MENTAL HEALTH CENTRES/
59. exp CASE MANAGEMENT/
60. COMMUNITY MENTAL HEALTH TEAMS/
61. CRISIS INTERVENTION/
62. PSYCHOTHERAPY/
63. exp YOUNG PEOPLES HEALTH SERVICES/ or adolescent health services.mp.
64. exp CHILD CARE/

65. exp CHILD WELFARE/
66. exp CHILDRENS HEALTH SERVICES/
67. ORAL HEALTH/
68. exp ELDERLY PEOPLE/ or exp MIDDLE AGED PEOPLE/ or aged.mp.
69. exp GERIATRICS/
70. exp PSYCHO GERIATRICS/
71. exp PALLIATIVE CARE/
72. exp TERMINAL CARE/
73. exp LONG TERM CARE/
74. primary prevention.mp.
75. exp SERVICE DELIVERY/
76. exp REHABILITATION/
77. REHABILITATION/
78. OCCUPATIONAL THERAPY/
79. exp COMMUNICABLE DISEASES/
80. ((outbreak: or infection:) adj control:).tw.
81. immunization programs.mp. or exp IMMUNISATION/
82. MASS SCREENING/
83. exp REHABILITATION CENTRES/
84. exp NURSING HOMES/
85. nursing hom.:.tw.
86. HOSPICE CARE/
87. DAY CARE/
88. RESPITE CARE/
89. (exp DRUG ABUSE/ or substance related disorders.mp.) and rehabilitation.mp. [mp=title, other title, abstract, heading words]
90. (mass media adj5 (health: or campaign: or scheme: or program: or project: or intervention: or strateg:)).tw.
91. health promot: school:tw.
92. (health adj5 (promot: or scheme: or program: or project: or strateg: or scheme: or intervention:)).tw.
93. school nurs:mp.
94. (speech and language therapist:).mp.
95. (family physician: or doctor: or nurse: or general practitioner: or GP or geriatrician: or health visitor: or dietician: or dietitian: or nutritionist: or physiotherapist: or occupational therapist: or therapist: or midwife).mp. or midwives.tw.
96. (dietitian: or dietician).tw.
97. (community adj2 (program: or scheme: or project: or intervention: adj strateg:)).tw.
98. ANTENATAL CARE/ or prenatal care.mp.
99. exp POST NATAL CARE/ or postnatal care.mp.
100. (geriatric evaluation or geriatric assessment).mp. [mp=title, other title, abstract, heading words]
101. government agencies.mp.
102. LOCAL GOVERNMENT/
103. ((municipal: or city or town: or local: or education: or school:) adj5 (council: or authorit: or govern: or board:)).tw.
104. (government: adj5 (agenc: or plan: or polic: or strateg:)).tw.
105. HOUSING/ or housing.mp.
106. PUBLIC HOUSING/ or SOCIAL HOUSING/ or COMMUNITY HOUSING/ or HOUSING/ or LOCAL AUTHORITY HOUSING/
107. neighbourhood characteristics.mp.
108. housing for the elderly.mp.
109. home care agencies.mp.
110. homes for the aged.mp.
111. residential facilities.mp. or RESIDENTIAL CARE/
112. SHELTERED HOUSING/ or EXTRA CARE HOUSING/ or VERY SHELTERED HOUSING/ or WARDEN SERVICED HOUSING/
113. ((shelter: or half-way or half way) adj5 (hous: or home: or accommodat:)).tw.
114. group home:tw.

115. ((residential or nurs:) adj5 (home care or facilit:)).tw.
116. exp NURSING HOMES/
117. nurs: hom: .mp.
118. ((foster or care) adj4 home:).tw.
119. supported living.tw.
120. homeless: .tw.
121. exp HOMELESSNESS/
122. exp SOCIAL WORK/
123. exp SOCIAL SECURITY/
124. exp SOCIAL WELFARE/
125. (social: adj4 (work: or support: or security or care: or welfare: or service: or network:)).tw.
126. exp "PATIENT ADVOCACY AND LIAISON SERVICE"/
127. consumer advocacy.mp.
128. exp COUNSELLING/ or counseling.mp.
129. "CIVIL AND POLITICAL RIGHTS"/
130. WELFARE RIGHTS/
131. domestic care.tw.
132. day service.tw.
133. (exp DRUG ABUSE/ or substance related disorders.mp.) and rehabilitation.mp. [mp=title, other title, abstract, heading words]
134. (ALCOHOLISM/ or ALCOHOLISM TREATMENT/) and rehabilitation.mp. [mp=title, other title, abstract, heading words]
135. (ALCOHOL CONSUMPTION/ or alcohol drinking.mp.) and (prevention and control).mp. [mp=title, other title, abstract, heading words]
136. (BEHAVIOUR DISORDERS/ or social behaviour disorders.mp.) and (nursing or rehabilitation).mp. [mp=title, other title, abstract, heading words]
137. exp JUVENILE DELINQUENCY/
138. youth offending team: .tw.
139. ((young or juvenile) adj2 offender:).tw.
140. (youth adj4 service:).tw.
141. YOUTH SERVICES/
142. ((leisure or community or youth or recreation:) adj2 (center: or centre:)).tw.
143. (play ground: or playground: or school yard: or schoolyard:).tw.
144. (PARKS/ or parks.mp.) and (LEISURE/ or recreation.mp.)
145. ((housing or neighbourhood or neighborhood) adj2 regeneration).tw.
146. ((neighbourhood or neighborhood) adj3 (renew: or improv: or revitali?ation)).tw.
147. URBAN RENEWAL/ or exp URBAN REGENERATION/
148. exp SOCIAL PLANNING/
149. BUILT ENVIRONMENT/ or URBAN ENVIRONMENT/
150. built environment: .mp. or urban environment: .tw.
151. ((child: or domestic: or partner: or spousal) adj3 (abuse: or violen: or protect:)).mp.
152. exp FOSTER CARE/ or foster home.mp.
153. (disabled and rehabilitation).mp. [mp=title, other title, abstract, heading words]
154. exp BUILDING CONVERSION/ or home adaptation.mp.
155. (local adj2 (council: or hous:)).tw.
156. exp SPORTS GROUNDS/ or play: field: .tw.
157. (school: adj2 (infant: or junior: or kindergarten or senior: or primary or comprehensive or grammar or high or elementary or secondary)).tw.
158. sixth form college: .tw.
159. EDUCATIONAL PSYCHOLOGISTS/ or educational psychologist: .tw.
160. occupational psychologist: .tw.
161. ((environmental health or occupational health or housing or welfare rights or youth) adj5 (worker: or officer:)).tw.
162. public librar: .mp. or school teacher: .tw.
163. or/1-21
164. or/22-100

165. or/101-162
 166. and/163-165
 167. exp RANDOMISED CONTROLLED TRIALS/
 168. controlled clinical trial.mp.
 169. intervention studies.mp.
 170. experiment:.tw.
 171. (time adj series).tw.
 172. (pre test or pretest or (posttest or post test)).tw.
 173. random allocation.tw.
 174. impact.tw.
 175. intervention:.tw.
 176. chang:.tw.
 177. evaluation studies.mp.
 178. evaluat:.tw.
 179. effect:.tw.
 180. exp COMPARATIVE STUDIES/
 181. or/167-180
 182. 166 and 181
 183. limit 182 to yr="1966 - 2008"

Database: **International Bibliography of the Social Sciences (IBSS)**

S161	S63 and S139 and S160
S160	S140 or S141 or S142 or S143 or S144 or S145 or S146 or S147 or S148 or S149 or S150 or S151 or S152 or S153 or S154 or S155 or S156 or S157 or S158 or S159
S159	TX collaborati*
S158	Cooperative Behaviour
S157	Interprofessional Relations
S156	integrat* N5 agenc*
S155	integrat* N5 disciplin*
S154	integrat* N5 team*
S153	integrat* N5 teamwork*
S152	integrat* N5 partnership*
S151	integrat* N5 profession*
S150	integrat* N5 work*
S149	TX partnership* or TX teamwork* or TX team work* or team-work*

(Continued)

S148	TX multiagenc* or TX multi-agenc* or TX multidisciplin* or TX multi-disciplin* or TX multiprofessional* or TX multi-professional* or TX multi-sector* or multisector*
S147	TX joint* commission* or TX joint-commission* or TX joint* plan* or TX joint-plan* or TX joint* work* or TX joint-work* or TX joined up* or TX joined-up or jointness*
S146	TX intersector* or inter-sector*
S145	TX interdisciplin* or inter-disciplin*
S144	TX interagenc* or inter-agenc*
S143	TX cross-system* or TX cross system* or TX cross disciplin* or cross-disciplin*
S142	TX cooperative* behavior* or TX cooperative* behaviour* or TX cooperative* plan*
S141	TX interprofessional* relation* or inter-professional* relation*
S140	TX interdepartmental* relation* or inter-departmental* relation*
S139	S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104 or S105 or S106 or S107 or S108 or S109 or S110 or S111 or S112 or S113 or S114 or S115 or S116 or S117 or S118 or S119 or S120 or S121 or S122 or S123 or S124 or S125 or S126 or S127 or S128 or S129 or S130 or S131 or S132 or S133 or S134 or S135 or S136 or S137 or S138S64 or S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 or S94 or S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104 or S105 or S106 or S107 or S108 or S109 or S110 or S111 or S112 or S113 or S114 or S115 or S116 or S117 or S118 or S119 or S120 or S121 or S122 or S123 or S124 or S125 or S126 or S127 or S128 or S129 or S130 or ...Show Less
S138	housing association*
S137	(Public or council) and housing
S136	sheltered and (housing or living or accommodation)
S135	Residential Facilit*
S134	Social Security
S133	Consumer Advocacy
S132	Counseling or counselling
S131	civil rights
S130	alcoholism

(Continued)

S129	Alcohol Drinking
S128	(Juvenile or youth) and (delinquency or offending)
S127	(sixth form or tertiary) and college
S126	welfare N5 officer*
S125	school teacher*
S124	TX public librar*
S123	environmental health N5 officer*
S122	youth N5 officer*
S121	housing N5 officer*
S120	youth N5 worker*
S119	housing N5 worker*
S118	occupational health N5 worker*
S117	educational psychologist*
S116	school* N2 secondary
S115	school* N2 high
S114	school* N2 comprehensive
S113	school* N2 senior*
S112	school* N2 junior*
S111	play* field*
S110	home adaptation*
S109	TX spousal N3 protect*
S108	TX domestic* N3 protect*
S107	TX spousal N3 abuse*
S106	TX domestic* N3 abuse*

(Continued)

S105	TX spousal N3 violen*
S104	TX domestic* N3 violen*
S103	TX built environment* or urban environment*
S102	neighborhood N3 revitalization
S101	neighbourhood N3 improv*
S100	neighbourhood N2 regeneration
S99	TX parks and recreation*
S98	recreation* N2 center
S97	community N2 center
S96	recreation* N2 centre
S95	community N2 centre
S94	youth N4 service*
S93	young N2 offender*
S92	day service
S91	welfare rights
S90	social* N4 network*
S89	social* N4 welfare*
S88	social* N4 security
S87	social* N4 work*
S86	homeless*
S85	supported living
S84	foster N4 home*
S83	residential N5 home care
S82	residential N5 facilit*

(Continued)

S81	halfway N5 hous*
S80	half-way N5 home*
S79	shelter* N5 accommodat*
S78	shelter* N5 hous*
S77	government* N5 strateg*
S76	government* N5 plan*
S75	school* N5 board*
S74	school* N5 authorit*
S73	education* N5 board*
S72	education* N5 authorit*
S71	local* N5 board*
S70	local* N5 authorit*
S69	town* N5 board*
S68	town* N5 authorit*
S67	city* N5 board*
S66	city* N5 authorit*
S65	municipal* N5 board*
S64	municipal* N5 authorit*
S63	S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62
S62	service* accessib*
S61	home care
S60	health promotion
S59	health service*

(Continued)

S58	Primary healthcare
S57	Primary health care
S56	"health and welfare"
S55	community and (centre* or center*)
S54	Community health service*
S53	mental health service*
S52	mental health service*
S51	emergency medical service*
S50	nursing administration
S49	health service* and (elderly or aged)
S48	case management
S47	crisis intervention*
S46	psychotherapy
S45	(Adolescent or youth) and health service*
S44	child and (health service* or welfare or care)
S43	oral health
S42	geriatrics or gerontology
S41	(health care or healthcare) and delivery
S40	health manpower
S39	occupational therapy
S38	(communicable or infectious) and disease
S37	Immuni?ation program*
S36	health screening
S35	rehabilitation

(Continued)

S34	(hospice or palliative or terminal) and care
S33	day care
S32	respite care
S31	alcohol and (use or abuse or misuse)
S30	drug and (use or abuse or misuse)
S29	substance and (use or abuse or misuse)
S28	(postnatal or prenatal or antenatal) and care
S27	welfare right* N7 health
S26	community N2 strateg*
S25	community N2 intervention*
S24	community N2 project*
S23	community N2 scheme*
S22	community N2 program*
S21	TX family physician* or TX doctor* or TX nurse* or TX general practitioner* or TX GP or TX geriatrician* or TX health visitor* or TX dietician* or TX dietitian* or TX nutritionist* or TX physiotherapist* or TX occupational therapist* or TX therapist* or TX midwife or midwives
S20	TX "speech and language therapist*" or TX speech therapist*
S19	health N5 intervention*
S18	health N5 scheme*
S17	health N5 strateg*
S16	health N5 project*
S15	health N5 program*
S14	health N5 promot*
S13	health promot* school*
S12	mass media N5 strateg*

(Continued)

S11	mass media N5 intervention*
S10	mass media N5 project*
S9	mass media N5 program*
S8	mass media N5 campaign*
S7	mass media N5 health*
S6	nursing home*
S5	control and (outbreak* or infection*)
S4	community mental health team*
S3	TX community mental health cent*
S2	TX community health nurs*
S1	TX community care or continuing care or long term care or longterm care or long-term care

Database: **ISI Science Citation Index**

#21	#20 AND #14
#20	#19 OR #18 OR #17 OR #16 OR #15
#19	Topic=("pre test" or pretest or posttest or "post test")
#18	TS=randomised controlled trial OR TS=randomized controlled trial OR TS=controlled clinical trial
#17	TS=intervention stud* OR TS= Evaluation OR TS=time series
#16	TS=randomized controlled study OR TS= "random allocation" OR TS=cross-sectional
#15	TS= clinical trial* OR TS=research design OR TS=comparative stud* OR TS=evaluation stud* OR TS=controlled trial* OR TS=follow-up stud* OR TS= cohort OR TS=prospective stud* OR TS=random* OR TS=placebo* OR TS=(single blind*) OR TS=(double blind*)
#14	#13 AND #9 AND #4
#13	#12 OR #11 OR #10

(Continued)

#12	TS="rental housing" OR TS="residential institutions" OR TS=metropolitan councils OR TS=district councils OR TS=public housing OR TS=home care agencies
#11	TS=federal government OR TS=municipal government OR TS=government agencies OR TS=local authority*
#10	TS=central government OR TS=city planning OR TS=community services OR TS=councils
#9	#8 OR #7 OR #6 OR #5
#8	TS=public health OR TS=Mental Health OR TS= health OR TS=occupational therapy OR TS=health promotion OR TS=injury prevention
#7	TS="nursing service*" OR TS="public health nursing" OR TS= rehabilitation OR TS="community health nurs*" OR TS="adolescent health" OR TS=" child health" OR TS="child care" OR TS=" child welfare" OR TS=geriatric
#6	TS=health promotion OR TS="health planning" OR TS="Delivery of Health Care" OR TS=health service OR TS= Community Health OR TS=rural health OR TS=mental health" OR TS=oral health" OR TS=preventive health
#5	TS=family physician* OR TS=doctor* OR TS=nurse* OR TS=general practitioner* OR TS=GP OR TS=geriatrician* OR TS= health visitor* OR TS=dietician* OR TS=dietitian* OR TS=nutritionist* OR TS=physiotherapist* OR TS=occupational therapist* OR TS=therapist* OR TS=midwife OR TS=midwives
#4	#3 OR #2 OR #1
#3	TS=integrat* OR TS= partnership* OR TS= team* OR TS=teamwork* OR TS=participat* OR TS= collaboration
#2	TS=collaborat* OR TS=multiagenc* OR TS=multi-agenc* OR TS= multidisciplin* OR TS=multi-disciplin* OR TS=multi-professional* OR TS=multi-professional* OR TS=multi-sector*
#1	TS=interinstitutional relation* OR TS= cooperative behavior OR TS= interprofessional relation* OR TS= community-institutional relations

Database: **ISI Social Sciences Citation Index**

#21	#20 AND #14
#20	#19 OR #18 OR #17 OR #16 OR #15
#19	Topic=("pre test" or pretest or posttest or "post test")
#18	TS=randomised controlled trial OR TS=randomized controlled trial OR TS=controlled clinical trial
#17	TS=intervention stud* OR TS= Evaluation OR TS=time series
#16	TS=randomized controlled study OR TS=" random allocation" OR TS=cross-sectional

(Continued)

#15	TS= clinical trial* OR TS=research design OR TS=comparative stud* OR TS=evaluation stud* OR TS=controlled trial* OR TS=follow-up stud* OR TS= cohort OR TS=prospective stud* OR TS=random* OR TS=placebo* OR TS=(single blind*) OR TS=(double blind*)
#14	#13 AND #9 AND #4
#13	#12 OR #11 OR #10
#12	TS="rental housing" OR TS="residential institutions" OR TS=metropolitan councils OR TS=district councils OR TS=public housing OR TS=home care agencies
#11	TS=federal government OR TS=municipal government OR TS=government agencies OR TS=local authority*
#10	TS=central government OR TS=city planning OR TS=community services OR TS=councils
#9	#8 OR #7 OR #6 OR #5
#8	TS=public health OR TS=Mental Health OR TS= health OR TS=occupational therapy OR TS=health promotion OR TS=injury prevention
#7	TS="nursing service*" OR TS="public health nursing" OR TS= rehabilitation OR TS="community health nurs*" OR TS="adolescent health" OR TS=" child health" OR TS="child care" OR TS= "child welfare" OR TS=geriatric
#6	TS=health promotion OR TS="health planning" OR TS="Delivery of Health Care" OR TS=health service OR TS= Community Health OR TS=rural health OR TS=mental health" OR TS=oral health" OR TS=preventive health
#5	TS=family physician* OR TS=doctor* OR TS=nurse* OR TS=general practitioner* OR TS=GP OR TS=geriatrician* OR TS= health visitor* OR TS=dietician* OR TS=dietitian* OR TS=nutritionist* OR TS=physiotherapist* OR TS=occupational therapist* OR TS=therapist* OR TS=midwife OR TS=midwives
#4	#3 OR #2 OR #1
#3	TS=integrat* OR TS= partnership* OR TS= team* OR TS=teamwork* OR TS=participat* OR TS= collaboration
#2	TS=collaborat* OR TS=multiagenc* OR TS=multi-agenc* OR TS= multidisciplin* OR TS=multi-disciplin* OR TS=multi-professional* OR TS=multi-professional* OR TS=multi-sector*
#1	TS=interinstitutional relation* OR TS= cooperative behavior OR TS= interprofessional relation* OR TS= community-institutional relations

Database: **Ovid MEDLINE®**

1. inter?institutional relation:.mp.
2. exp Interprofessional relations/
3. interdepartmental relations/
4. interdepartmental: relation:.mp. or inter-departmental: relation:.tw.
5. interprofessional: relation:.mp. or inter-professional: relation:.tw.
6. community-institutional relations/

7. exp cooperative behavior/
8. (cooperative: behavior: or co-operative: behavior: or cooperative: behaviour: or co-operative: behaviour: or cooperative: plan:).mp.
or co-operative: plan:.tw.
9. collaborat:..mp.
10. (cross-system: or cross system: or cross disciplin:).mp. or cross-disciplin:..tw.
11. interagenc:..mp. or inter-agenc:..tw.
12. interdisciplin:..mp. or inter-disciplin:..tw.
13. intersector:..mp. or inter-sector:..tw.
14. (transdisciplin: or trans-disciplin:).mp.
15. (integrat: adj5 (work: or profession: or partnership: or team: or teamwork: or disciplin: or agenc:)).tw.
16. (welfare right: adj7 health:).tw.
17. jointness.mp.
18. (work: adj5 (joint: commission: or joint-commission: or joint: plan: or joint-plan: or joint: work: or joint-work: or joined up: or joined-up)).mp.
19. (work: adj5 (partnership: or teamwork: or team work: or team-work:)).tw.
20. (partner agenc\$ or partner department\$).tw.
21. ((behave or behaving or behaves or behaved) adj cooperative\$).tw.
22. (cooperativ\$ adj2 (work\$ or behavior?r or agenc\$)).tw.
23. (partnership adj3 (work\$ or cooperat\$ or plan\$ or relations or behavior?r or agenc\$)).tw.
24. (interdepartmental adj2 (work\$ or cooperat\$ or behavior?r)).tw.
25. (interprofessional adj2 (work\$ or cooperat\$ or behavior?r or agenc\$)).tw.
26. (cross sector\$ or cross?sector\$ or across sector\$).tw.
27. (multi department\$ or multidepartment\$).tw.
28. ((working or work or works or worked) adj together).tw.
29. Interdisciplinary communication/
30. (multiagenc: or multi-agenc: or multidisciplin: or multi-disciplin: or multiprofessional: or multi-professional: or multi-sector:).mp.
or multisector:..tw.
31. public health/
32. public health administration/
33. exp health planning/og, mt, td [Organization & Administration, Methods, Trends]
34. exp health planning organizations/
35. community health planning/og, mt, td [Organization & Administration, Methods, Trends]
36. health services accessibility/og [Organization & Administration]
37. exp home care services/og, ma [Organization & Administration, Manpower]
38. exp "Health Services Needs and Demand"/og [Organization & Administration]
39. health planning/
40. exp health promotion/og, ma, mt [Organization & Administration, Manpower, Methods]
41. health services/
42. Community Health Services/og, ma, mt [Organization & Administration, Manpower, Methods]
43. exp Community Health Centers/ma, og [Manpower, Organization & Administration]
44. community care.mp. or continuing care.tw. or long term care.tw. or longterm care.tw. or long-term care.tw.
45. exp Health Education/mt, og, ma [Methods, Organization & Administration, Manpower]
46. exp primary health care/
47. comprehensive health care/
48. physicians, family/
49. emergency medical services/
50. preventive health services/
51. exp preventive health services/og, ma, mt [Organization & Administration, Manpower]
52. exp nursing services/og, ma [Organization & Administration, Manpower]
53. nursing/og, ma, mt [Organization & Administration, Manpower, Methods]
54. public health nursing/
55. rehabilitation nursing/
56. community health nurs:..mp.

57. health services for the aged/
58. rural health services/og, ma [Organization & Administration, Manpower]
59. health services, indigenous/
60. exp mental health services/og, ma [Organization & Administration, Manpower]
61. community mental health services/
62. exp community mental health centers/
63. exp case management/
64. community mental health team:.tw.
65. crisis intervention/
66. Psychotherapy/ma, mt, og [Manpower, Methods, Organization & Administration]
67. exp adolescent health services/
68. exp child care/
69. exp child welfare/
70. exp child health services/
71. Oral Health/
72. *aged/
73. exp Geriatrics/ma, mt, og [Manpower, Methods, Organization & Administration]
74. exp palliative care/og, ma, mt [Organization & Administration,Manpower,Methods]
75. exp Terminal Care/og, ma, mt [Organization & Administration, Manpower, Methods]
76. exp Long-Term Care/og, ma, mt [Organization & Administration, Manpower, Methods]
77. exp primary prevention/ma, mt, og [Manpower, Methods, Organization & Administration]
78. "delivery of health care"/mt, og, ma [Methods,Organization & Administration, Manpower]
79. exp rehabilitation/mt, nu, og, ma [Methods, Nursing, Organization & Administration, Manpower]
80. rehabilitation/
81. occupational therapy/
82. exp communicable diseases/
83. ((outbreak: or infection:) adj control:).tw.
84. (welfare right: adj7 health:).tw.
85. exp immunization programs/og, ma, mt [Organization & Administration, Manpower,Methods]
86. mass screening/og, mt [Organization & Administration,Methods]
87. exp rehabilitation centers/
88. exp nursing homes/og, ma [Organization & Administration,Manpower]
89. nursing hom:.tw.
90. hospice care/og, ma, mt [Organization & Administration,Manpower]
91. day care/
92. respite care/
93. exp substance related disorders/rh [rehabilitation]
94. (mass media adj5 (health: or campaign: or scheme: or program: or project: or intervention: or strateg:)).tw.
95. health promot: school:.tw.
96. (health adj5 (promot: or scheme: or program: or project: or strateg: or scheme: or intervention:)).tw.
97. school nurs:.mp.
98. (speech and language therapist:.mp.
99. (family physician: or doctor: or nurse: or general practitioner: or GP or geriatrician: or health visitor: or dietician: or dietitian: or nutritionist: or physiotherapist: or occupational therapist: or therapist: or midwife).mp. or midwives.tw.
100. dietitian:.tw.
101. (community adj2 (program: or scheme: or project: or intervention: or strateg:)).tw.
102. Prenatal Care/mt, og, ma [Methods, Organization & Administration, Manpower]
103. Postnatal Care/og, ma, mt [Organization & Administration, Manpower, Methods]
104. geriatric evaluation.mp. and management.tw.
105. government agencies/
106. local government/
107. ((municipal: or city or town: or local: or education: or school:) adj5 (council: or authorit: or govern: or board:)).tw.
108. (government: adj5 (agenc: or plan: or polic: or strateg:)).tw.

109. housing.mp.
110. public housing/
111. residence characteristics/
112. housing for the elderly/
113. home care agencies/
114. homes for the aged/
115. exp Residential Facilities/og, ma, mt [Organization & Administration, Manpower, Methods]
116. residential facilities/
117. ((shelter: or half-way or half way) adj5 (hous: or home: or accommodat:)).tw.
118. group home:.tw.
119. ((residential or nurs:) adj5 (home care or facilit:)).tw.
120. exp nursing homes/
121. nurs: home:.mp.
122. ((foster or care) adj4 home:).tw.
123. supported living.tw.
124. exp homeless persons/
125. homeless:.tw.
126. exp social work/
127. exp social security/
128. exp social welfare/
129. (social: adj4 (work: or support: or security or care: or welfare: or service: or network:)).tw.
130. consumer advocacy/
131. *counseling/
132. civil rights/
133. welfare rights.tw.
134. domestic care.tw.
135. day service:.tw.
136. exp Substance-Related Disorders/rh [Rehabilitation]
137. Alcoholism/rh [Rehabilitation]
138. Alcohol Drinking/pc [Prevention & Control]
139. exp Social Behavior Disorders/nu, rh [Nursing, Rehabilitation]
140. Juvenile Delinquency/pc, rh [Prevention & Control, Rehabilitation]
141. youth offending team:.tw.
142. ((young or juvenile) adj2 offender:).tw.
143. (youth adj4 service:).tw.
144. ((leisure or community or youth or recreation:) adj2 (center: or centre:)).tw.
145. (play ground: or playground: or school yard: or schoolyard:).tw.
146. parks.mp. and recreation:.tw.
147. ((housing or neighbourhood or neighborhood) adj2 regeneration).tw.
148. ((neighbourhood or neighborhood) adj3 (renew: or improv: or revitali?ation)).tw.
149. exp social planning/
150. built environment:.mp. or urban environment:.tw.
151. ((child: or domestic: or partner: or spousal) adj3 (abuse: or violen: or protect:)).mp.
152. foster home care/
153. exp Disabled Persons/rh [Rehabilitation]
154. home adaptation:.tw.
155. (local adj2 (council: or hous:)).tw.
156. play: field:.tw.
157. (school: adj2 (infant: or junior: or kindergarten or senior: or primary or comprehensive or grammar or high or elementary or secondary)).tw.
158. sixth form college:.tw.
159. educational psychologist:.tw.
160. occupational psychologist:.tw.

161. ((environmental health or occupational health or housing or welfare rights or youth) adj5 (worker: or officer:)).tw.
162. public librar:.mp. or school teacher:.tw.
163. or/1-30 [collaboration]
164. or/31-104 [Health]
165. or/105-162 [government]
166. randomized controlled trial.pt.
167. controlled clinical trial.pt.
168. intervention studies/
169. experiment\$.tw.
170. (time adj series).tw.
171. (pre test or pretest or (posttest or post test)).tw.
172. random allocation/
173. impact.tw.
174. intervention?.tw.
175. chang\$.tw.
176. evaluation studies/
177. evaluat\$.tw.
178. effect?.tw.
179. comparative study.pt.
180. or/166-179
181. or/163-165
182. 180 and 181
183. limit 182 to yr="1966 - 2008"

Database: **PsycINFO**

1. exp Public Relations/
2. inter?institutional relation:.mp.
3. interdepartmental: relation:.mp. or inter-departmental relation:.tw.
4. interprofessional: relation:.mp. or inter-professional: relat:.tw.
5. exp Cooperation/ or cooperative behavior:r.mp.
6. (cooperative: behavior: or co-operative: behavior: or cooperative: behaviour: or co-operative behaviour: or co-operative: plan:).mp. or co-operative plan.tw.
7. collaborat:.mp.
8. (cross-system: or cross system: or cross disciplin:).mp. or cross-disciplin:.tw.
9. Integrated Services/
10. (inter agency or inter-agency).mp.
11. Interdisciplinary Treatment Approach/
12. interdisciplin:.mp. or inter-disciplin:.tw.
13. intersector:.mp. or inter-sector.tw.
14. (work: adj5 (joint: commission: or joint-commission: or joint: plan: or joint-plan: or joint: work: or joint-work or joined up or joined-up)).mp.
15. (work: adj5 (multiagenc: or multi-agenc: or multidisciplin: or multi-disciplin: or multiprofessional: or multi-professional: or multi-sector: or multisector:)).tw.
16. (work: adj5 (partnership: or teamwork: or team work: or team-work:)).tw.
17. (transdisciplin: or trans-disciplin:).mp.
18. (integrat: adj5 (work: or profession: or partnership: or team: or teamwork: or disciplin: or agenc:)).mp. [mp=title, abstract, heading word, table of contents, key concepts]
19. ("Welfare Services (Government"/ or welfare right.mp.) adj7 health:.mp. [mp=title, abstract, heading word, table of contents, key concepts]
20. Public Health/
21. Public Health Services/ or public health administration.mp.
22. health planning.mp.
23. health planning organizations.mp.

24. community health planning.mp.
25. health services accessibility.mp.
26. access to health care.mp.
27. exp Home Care/ or home care services.mp.
28. (health services needs and demand).mp. [imp=title, abstract, heading word, table of contents, key concepts]
29. exp Health Promotion/
30. Health Care Services/
31. Health Care Delivery/
32. Community Services/ or community health services.mp.
33. (community health centres or community health centers).mp.
34. community care.mp. or continuing care.tw. or long term care.tw. or longterm care.tw. or long-term care.tw.
35. exp Health Education/
36. exp Primary Health Care/
37. comprehensive health care.mp.
38. Family Physicians/
39. Emergency Services/ or emergency medical services.mp.
40. preventive health services.mp.
41. nursing services.mp.
42. exp Nursing/
43. exp Psychiatric Nurses/ or mental health nursing.mp.
44. exp Public Health Service Nurses/ or public health nursing.mp.
45. rehabilitation nursing.mp.
46. community health nursing.mp.
47. health services for the aged.mp.
48. rural health services.mp.
49. (indigenous populations and health services).mp.
50. exp Mental Health Services/
51. exp Community Mental Health Services/
52. exp Community Mental Health Centers/ or community mental health centres.mp.
53. exp Case Management/
54. community mental health team.mp.
55. Crisis Intervention/
56. Psychotherapy/
57. exp Adolescent Psychiatry/ or adolescent health services.mp.
58. exp Child Care/
59. exp Child Welfare/
60. child health services.mp.
61. Oral Health/
62. *aged/
63. exp Geriatrics/
64. exp Palliative Care/
65. exp Terminally Ill Patients/ or terminal care.mp.
66. exp Long Term Care/
67. exp Primary Mental Health Prevention/
68. primary prevention.mp.
69. Health Care Delivery/ or delivery of health care.mp.
70. exp Rehabilitation/
71. Occupational Therapy/
72. communicable diseases.mp. or exp Infectious Disorders/
73. ((outbreak: or infection:) adj control:).tw.
74. exp Immunization/ or immunization program:.mp.
75. Screening/ or mass screening.mp.
76. exp Rehabilitation Centers/ or rehabilitation centres.mp.

77. exp Nursing Homes/
78. nursing hom:..tw.
79. nursing hom:..tw.
80. Hospice/ or hospice care.mp.
81. Day Care Centers/ or day care.mp.
82. Respite Care/
83. (exp Drug Abuse/ or substance related disorders.mp.) and rehabilitation.mp.
84. (mass media adj5 (health: or campaign: or scheme: or program: or project: or strateg: or scheme: or intervention: or strateg:)).tw.
85. health promot: school:..tw.
86. (health adj5 (promotion: or scheme: or program: or project: or strateg: or scheme: or intervention:)).tw.
87. school nurs:..mp.
88. (speech and language therapist).mp. [mp=title, abstract, heading word, table of contents, key concepts]
89. (family physician: or doctor: or nurse: or general practitioner: or GP or geriatrician: or health visitor: or dietician: or dietitian: or nutritionist: or physiotherapist: or occupational therapist: or therapist: or midwife:).mp. or midwives.tw.
90. dietitian:..tw.
91. (communit: adj2 (program: or scheme: or project: or intervention: or strateg:)).tw.
92. Prenatal Care/
93. postnatal care.mp.
94. (Geriatric Assessment/ or geriatric evaluation.mp.) and management.tw.
95. Government Agencies/
96. local government.mp.
97. ((municipal: or city or town: or local: or education: or school:) adj5 (council: or authorit: or govern: or board:)).tw.
98. (government: adj5 (agenc: or plan: or polic: or strateg:)).tw.
99. housing.mp. or exp Housing/
100. public housing.mp. or social housing.tw. or council housing.tw.
101. residence characteristics.mp.
102. housing for the elderly.mp.
103. home care agencies.mp.
104. Elder Care/ or homes for the aged.mp.
105. exp Residential Care Institutions/ or residential facilities.mp.
106. ((shelter: or half-way or half way) adj5 (hous: or home: or accommodat:)).tw.
107. Group Homes/
108. ((residential or nurs:) adj5 (home care or facilit:)).tw.
109. exp Nursing Homes/
110. nurs: home:..mp.
111. ((foster or care) adj4 home:).tw.
112. exp Independent Living Programs/ or supported living.mp.
113. Homeless Mentally Ill/ or Homeless/ or homeless.mp.
114. social work.mp. or exp Social Casework/
115. exp Social Security/
116. exp "Welfare Services (Government)" / or social welfare.mp.
117. (social: adj4 (work: or support: or security or care: or welfare: or service: or network:)).tw.
118. Advocacy/ or consumer advocacy.mp.
119. *counseling/
120. Civil Rights/
121. welfare rights.tw.
122. Home Care/ or domestic care.mp.
123. Day Care Centers/ or Adult Day Care/ or day service:..mp.
124. (exp Drug Dependency/ or exp Drug Abuse/ or substance related disorders.mp.) and rehabilitation.mp.
125. Alcoholism/ and rehabilitation.mp. [mp=title, abstract, heading word, table of contents, key concepts]
126. (Alcoholism/ or Alcohol Abuse/ or alcohol drinking.mp.) and (prevention and control).mp.
127. Behavior Disorders/ or social behaviour disorders.mp.
128. Juvenile Delinquency/ and (prevention and control).mp. [mp=title, abstract, heading word, table of contents, key concepts]

129. youth offending team.mp.
130. ((young or juvenile) adj2 offender:).tw.
131. (youth adj4 service:).tw.
132. ((leisure or community or youth or recreation:) adj2 (center: or centre:)).tw.
133. (play ground: or playground: or school yard: or schoolyard:).tw.
134. parks.mp. and recreation:.tw.
135. ((housing or neighbourhood or neighborhood) adj2 regeneration).tw.
136. ((neighbourhood or neighborhood) adj3 (renew: or improv: or revitali?ation)).tw.
137. social planning.mp.
138. built environment:.mp. or urban environment:.tw.
139. ((child: or domestic: or partner: or spousal) adj3 (abuse: or violen: or protect:)).mp.
140. Foster Care/ or foster home care.mp.
141. (disabled and rehabilitation).mp.
142. home adaptation.mp.
143. (local adj2 (council: or hous:)).tw.
144. play: field:.tw.
145. (school: adj2 (infant: or junior: or kindergarten or senior: or primary or comprehensive or grammar or high or elementary or secondary)).tw.
146. sixth form college:.tw.
147. Educational Psychologists/
148. occupational psychologist.mp.
149. ((environmental health or occupational health or housing or welfare rights or youth) adj5 (worker: or officer:)).tw.
150. public librar:.mp. or school teacher:.tw.
151. or/1-19 [collaboration]
152. or/20-94 [health]
153. or/95-150 [government]
154. and/151-153
155. randomized controlled trial.mp.
156. controlled clinical trial.mp.
157. intervention stud:.mp.
158. experiment:.tw.
159. (time adj series).tw.
160. (pre test or pretest or (post test or posttest)).tw.
161. random allocation.tw.
162. intervention?.tw.
163. chang:.tw.
164. evaluation stud:.mp.
165. evaluat:.tw.
166. effect?.tw.
167. comparative stud:.mp.
168. or/155-167
169. 168 and 154
170. limit 169 to yr="1966 - 2008"

Cochrane Public Health Specialized Register

{collab} OR {local government} OR {multi-discip} OR {multi-sector} OR {intersector} OR {interdepart} OR {interdiscip} OR {interagenc} OR {multi-agenc}

Database: **Rehabdata**

Government and health and (collaboration or cooperation or interagency)

Database: **OpenGrey**

#70 (government or "local authority" or council or housing or neighbourhood or nursing home or homeless or alcohol abuse or drug abuse or clinic or rehabilitation) and ("health services" or "primary health care" or "community health services" or "mental health services") and (collaboration or interagency or interprofessional or partnership or teamwork)(34 records)

#69 teamwork(141 records)
 #68 partnership(1673 records)
 #67 interprofessional(48 records)
 #66 interagency(20 records)
 #65 collaboration(3304 records)
 #64 "services"(44250 records)
 #63 "health"(45657 records)
 #62 "mental"(2434 records)
 #61 "services"(44250 records)
 #60 "health"(45657 records)
 #59 "community"(35492 records)
 #58 "care"(17415 records)
 #57 "health"(45657 records)
 #56 "primary"(831527 records)
 #55 "services"(44250 records)
 #54 "health"(45657 records)
 #53 rehabilitation(1058 records)
 #52 clinic(363 records)
 #51 abuse(1118 records)
 #50 drug(2696 records)
 #49 abuse(1118 records)
 #48 alcohol(1133 records)
 #47 homeless(435 records)
 #46 home(7072 records)
 #45 nursing(2265 records)
 #44 neighbourhood(508 records)
 #43 housing(10491 records)
 #42 council(37664 records)
 #41 "authority"(7865 records)
 #40 "local"(16836 records)
 #39 government(9511 records)
 #38 government or "local authority" or council or housing or neighbourhood or nursing home or homeless or alcohol abuse or drug abuse or clinic or rehabilitation(58805 records)
 #37 rehabilitation(1058 records)
 #36 clinic(363 records)
 #35 abuse(1118 records)
 #34 drug(2696 records)
 #33 abuse(1118 records)
 #32 alcohol(1133 records)
 #31 homeless(435 records)
 #30 home(7072 records)
 #29 nursing(2265 records)
 #28 neighbourhood(508 records)
 #27 housing(10491 records)
 #26 council(37664 records)
 #25 "authority"(7865 records)
 #24 "local"(16836 records)
 #23 government(9511 records)
 #22 "health services" or "primary health care" or "community health services" or "mental health services"(10613 records)
 #21 "services"(44250 records)
 #20 "health"(45657 records)
 #19 "mental"(2434 records)
 #18 "services"(44250 records)

- #17 "health"(45657 records)
- #16 "community"(35492 records)
- #15 "care"(17415 records)
- #14 "health"(45657 records)
- #13 "primary"(831527 records)
- #12 "services"(44250 records)
- #11 "health"(45657 records)
- #10 collaboration or interagency or interprofessional or partnership or teamwork(5140 records)
- #9 teamwork(141 records)
- #8 partnership(1673 records)
- #7 interprofessional(48 records)
- #6 interagency(20 records)
- #5 collaboration(3304 records)
- #4 (government or "local authority" or council or housing or neighbourhood or "nursing home" or homeless or "alcohol abuse" or "drug abuse" or clinic or rehabilitation) and ("health services" or "primary health care" or "community health services" or "mental health services") and (collaboration or interagency or interprofessional or partnership or teamwork)(34 records)
- #3 government or "local authority" or council or housing or neighbourhood or "nursing home" or homeless or "alcohol abuse" or "drug abuse" or clinic or rehabilitation(58805 records)
- #2 "health services" or "primary health care" or "community health services" or "mental health services"(10613 records)
- #1 collaboration or interagency or interprofessional or partnership or teamwork(5140 records)

Database: **Social Care Online**

(topic="collaboration" or topic="interprofessional relations" or topic="interagency cooperation" or topic="integrated services" or topic="multi-disciplinary services") and (topic="public health" or topic="planning" or topic="access to services" or topic="health services" or keyword="community health services" or keyword="community health centres" or topic="primary care" or topic="emergency health services" or freetext="nursing" or topic="mental health services" or topic="community mental health services" or topic="case management" or topic="crisis intervention" or topic="psychotherapy" or topic="oral health" or topic="substance misuse" or topic="drug misuse" or topic="alcohol misuse" or freetext="school nurse" or freetext="family physician" or freetext="family doctor" or freetext="doctor" or freetext="community project" or freetext="community intervention") and (topic="local government" or topic="central government" or topic="government policy" or topic="housing" or topic="sheltered housing" or topic="community homes" or freetext="care homes" or topic="group homes" or topic="foster care" or topic="homeless people" or freetext="social work" or freetext="social security" or freetext="social welfare" or freetext="advocacy" or topic="counselling" or topic="juvenile delinquency" or topic="young offenders" or freetext="youth offending team" or freetext="youth service" or freetext="leisure centre" or freetext="playground" or freetext="neighbourhood regeneration" or freetext="neighbourhood renewal" or freetext="housing regeneration" or freetext="housing renewal" or freetext="home adaptation" or freetext="school or college")

Database: **Social Services Abstracts**

Query: ((DE=("cooperation" or "partner/partners/partnership" or "teamwork")) or (AB=(collaborat* or interagenc* or multiagenc*) or (inter-institutional* or inter-professional or inter-departmental*) or (interinstitutional* or interprofessional or interdepartmental*))) and(((DE=("day care" or "child care services" or "community mental health" or "elderly" or "emergency medical services" or "foster care" or "geriatrics" or "health" or "health care services" or "health care utilization" or "health education" or "health planning" or "health policy" or "health professions" or "home care" or "home health care" or "interprofessional approach" or "long term care" or "medicine" or "mental health" or "mental health services" or "midwifery" or "occupational safety and health" or "palliative care" or "paramedical personnel" or "physicians" or "primary health care" or "public health" or "residential institutions" or "respite care" or "social services" or "social services utilization" or "vaccination")) or (AB=("family physician*") or doctor* or (general practitioner*)) or AB=(nurs* or ("School nurs*") or

geriatrician*) or AB=((occupational therapist*) or physiotherapist* or nutritionist*) or AB=(dietitian* or dietician* or ("health visitor*)) or AB=(therapist* or midwives or midwife) or AB=((("occupational therapist*" or physiotherapist* or ("respite care")))) and(DE=("alcoholism" or "central government" or "city planning" or "communities" or "community services" or "councils" or "facilities" or "federal government" or "homelessness" or "housing" or "juvenile delinquency" or "libraries" or "local government" or "local planning" or "local politics" or "neighborhoods" or "nursing homes" or "public housing" or "recreation" or "residence" or "residential institutions" or "retirement" or "social policy" or "social security" or "social services" or "social support" or "social welfare" or "social work" or "welfare services"))

Database: **Sociological Abstracts**

Query: (((DE=("cooperation" or "intergroup relations" or "interpersonal relations" or "interaction" or "interdisciplinary approach" or "teams")) or (AB=(collaborat* or interagenc* or multiagenc*) or (inter-institutional* or inter-professional or inter-departmental*) or (interinstitutional* or interprofessional or interdepartmental*)) or ((inter-departmental) or (multidisciplin*) or ("cross disciplin*" or (partnership) or (interagency))) and((DE=("day care" or "activities of daily living" or "adult care services" or "after care" or "caregiver burden" or "caregivers" or "crisis intervention" or "elderly" or "geriatrics" or "gerontology" or "health" or "health care services" or "health care utilization" or "health education" or "health planning" or "health policy" or "home care" or "home health care" or "human services" or "independent living" or "long term care" or "medical decision making" or "mental health" or "mental health services" or "mental illness" or "physical education" or "primary health care" or "public health" or "rehabilitation" or "respite care" or "treatment programs")) or (AB=((("family physician*" or doctor* or (general practitioner*)) or AB=(nurs* or ("School nurs*" or geriatrician*) or AB=((occupational therapist* or physiotherapist* or nutritionist*) or AB=(dietitian* or dietician* or ("health visitor*)) or AB=(therapist* or midwives or midwife) or AB=((("occupational therapist*" or physiotherapist* or ("respite care")))) and((DE=("central government" or "cities" or "city planning" or "communities" or "community services" or "councils" or "facilities" or "foster care" or "government" or "government agencies" or "homelessness" or "housing" or "institutions" or "juvenile correctional institutions" or "libraries" or "local government" or "local planning" or "neighborhoods" or "nursing homes" or "public administration" or "public housing" or "rental housing" or "residential institutions" or "social security" or "social welfare" or "social work" or "welfare services")) or (AB=((("play ground*" or playground* or schoolyard*) or AB=((("school yard*" or parks or ("built environment*")))) and((KW=("comparative analysis" or "methodology data analysis" or "cohort analysis" or "longitudinal studies" or "random samples" or "research design" or "research subjects" or "sampling")) or (AB=(random* or ("controlled trial" or ("intervention stud*")) or AB=(experiment* or ("randomized control trial*"))))

Database: **TRoPHI (the Trials Register of Promoting Health Interventions)**

1. Collaboration
2. Cooperation
3. Partnership
4. 1 or 2 or 3
5. "health services"
6. "health care"
7. "health promotion"
8. "community care"
9. "primary care"
10. "mental health services"
11. "mental health care"
12. clinic
13. "emergency medical services"
14. nurse
15. doctor
16. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15
17. government
18. "local government"
19. "local authority"
20. council
21. housing
22. "nursing home"
23. homeless
24. alcoholism
25. alcohol abuse
26. "drug abuse"
27. rehabilitation
28. 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27
29. 16 and 28
30. 4 AND 36

Database: ZETOC service <http://zetoc.mimas.ac.uk/>

Collaboration or partnership or teamwork AND Health AND local government or local council or local authority or municipal council or municipal authority or government agency

WHAT'S NEW

Last assessed as up-to-date: 13 January 2012.

Date	Event	Description
30 August 2012	New citation required but conclusions have not changed	The evidence base remains weak and results are largely unchanged from previous version
22 August 2012	New search has been performed	Update search was performed from January 2008 to 31 December 2011 and five new studies were identified. Information on process or partnership evaluations has been included where available. Meta-analysis was per-

(Continued)

formed using studies with comparable outcomes. Summary of findings table was added. The evidence base remains weak and results are largely unchanged

HISTORY

Protocol first published: Issue 2, 2009

Review first published: Issue 6, 2011

Date	Event	Description
22 August 2012	New search has been performed	Update search was performed from January 2008 to 31 December 2011 and five new studies were identified. Information on process or partnership evaluations has been included where available. Meta-analysis was performed using studies with comparable outcomes. Summary of findings table was added. The evidence base remains weak and results are largely unchanged
26 July 2011	Amended	Response rate exclusion criteria made more explicit. Five year assessment data for Bertelsen have been excluded as response rate was less than 60%. More detailed reasons for exclusion have been given in the characteristics of excluded studies table. Lumley 2006 reference corrected.
11 August 2010	New search has been performed	Final draft submitted for editorial approval

CONTRIBUTIONS OF AUTHORS

The searches were performed by MKM and FMM. Papers were screened and data extracted by SLH, MKM, FMM, ALW and MJK. MJK provided statistical expertise and conducted the data analysis. The review was written by SLH, MKM, ALW, MJK and FMM.

DECLARATIONS OF INTEREST

None known

SOURCES OF SUPPORT

Internal sources

- Welsh Government & Abertawe Bro Morgannwg University Health Board, UK, UK.
Funding provided to SLH time to support and update the review.

External sources

- National Institute for Health Research, Cochrane Review Incentive Scheme, UK., UK.
Funding provided to assist in completion of review update
- The Victorian Health Promotion Foundation (VicHealth), Australia.
VicHealth provides funding to support the editorial process for all Cochrane Public Health Group reviews

DIFFERENCES BETWEEN PROTOCOL AND REVIEW

In the original review 24 databases were searched. For the update three databases (Ageline, ChildData and CommunityWISE) were not searched as institutional access had been terminated and the databases were not available to the review team.

The team had planned to search the Internet using Google Scholar, however it was decided searching relevant websites was more appropriate.

The protocol indicated that when no primary endpoint was identified by the study authors, the effect sizes would be ranked and the median selected. However, In order to investigate long-lasting effects it was decided to use the longest follow-up reported (where attrition did not exceed 40%).

The data analysis section of the protocol indicated that dichotomous outcomes would be presented as odds ratios and risk differences. To aid clarity it was decided that relative risks were a more intuitive measure so they were used throughout.

Where multiple outcomes from the same outcome category were reported from a single study, the stated primary outcome was used. If a primary outcome was not stated, the outcome used for the sample size calculation was selected. If the outcome used for the sample size calculation was not stated, the first outcome reported in the abstract or, failing that, the results section was selected for reporting.

A Summary of findings table was completed. It was decided that the inclusion of evidence quality for each group of outcomes (based on the GRADE approach) was not feasible given the heterogeneity and range of study designs. It was clear, however, that if it had been feasible to do this the quality of evidence would have been ranked low or very low for each outcome group.

INDEX TERMS

Medical Subject Headings (MeSH)

*Interinstitutional Relations; *Local Government; Government Agencies [*organization & administration]; Health Promotion [*organization & administration]; Health Systems Agencies [*organization & administration]; Mortality; Randomized Controlled Trials as Topic

MeSH check words

Humans