GIG CYMRU NHS WALES

Arsyllfa Iechyd Cyhoeddus Cymru

Public Health Wales Observatory

# Social prescribing: studies to be included in the forthcoming evidence map

Observatory Evidence Service

# Contents



*original reference number from include/exclude table

**Purpose:**

This document provides details of the sources that have been selected to be included in a social prescribing evidence map, which is being produced by the Public Health Wales Observatory Evidence Service for the Primary Care Hub.

**Method:**

The sources displayed in this document were selected via the search and review procedures detailed in the social prescribing protocol for evidence mapping (available on request). The full reference, abstract (or brief summary where no formal abstract was available) and a link to the full text (where available) for each source selected for the evidence map are listed. No critical appraisal of the sources has been conducted.

The sources have been grouped into thematic areas depending on the type of intervention studied. Five categories have been identified: Primary care referral to a link worker who can then facilitate access to a range of community interventions, referral to a community exercise intervention, referral to a community arts intervention, referral to a commercial weight loss programme, and referral to a community-based welfare advice service.

Within each thematic category the sources have then been grouped by study design. Categories include: systematic review with meta-analysis, systematic review without meta-analysis, non-systematic review, protocol for review, randomised controlled trial design, cohort design, non-randomised trial design (including mixed methods and before-after studies), and existing service or pilot service evaluations.

*original reference number from include/exclude table

## 1. Referral to a link worker / organisation who can facilitate access to a range of community interventions:

**Non systematic Reviews:**

**Mossabir R, et al. A scoping review to understand the effectiveness of linking schemes from healthcare providers to community resources to improve the health and well-being of people with long-term conditions. *Health & Social Care in the Community* 2015;23(5) 467-484.**

The prevalence of people living with long-term conditions is increasing, accompanied by an increased expectation that patients will become more involved in self-management. Long-term conditions are associated with increased social isolation and poor physical and mental health. But there remains a gap in health provision between providing medical treatment and effectively addressing psychosocial well-being. One potential way of addressing this gap is by utilising social interventions which link patients from health services to community-based sources of support. However, the mechanisms involved in the delivery of interventions providing that link and their effectiveness remain unclear. This review adopted the methodological framework for conducting scoping studies, searching for both academic and grey literature on social interventions which link people from healthcare settings to a range of community and voluntary sector organisations. A literature search between May and June 2013, involving five electronic databases, hand searching of two journals and the use of Google search engine, identified seven studies relevant to the review question. In terms of key characteristics and mechanisms of the interventions, mental health conditions and social isolation were the most common reasons for referral to the interventions, and referrals were usually made through general practices. Almost all the interventions were facilitator-led, whereby the facilitator worked to identify and link participants to appropriate community-based resources. In regard to health and social outcomes and their cost-effectiveness, studies reported improvement to participants' psychological and social well-being as well as their decreased use of health services, although there were limited measures of participants' physical health outcomes. Interventions for linking patients from healthcare setting to community-based resources target and address psychosocial needs of participants. The review identified involvement of health professionals in aiding the referral of patients to the intervention and the role of the intervention facilitators as key components of the interventions.
Link to full text: http://onlinelibrary.wiley.com/doi/10.1111/hsc.12176/pdf
127*

*original reference number from include/exclude table

**Thomson L, et al. *Social prescribing: a review of community referral schemes*. London: University College London; 2015.**
This review aims to set the scene for the conditions under which social prescribing has arisen and consider the efficacy of different referral options. Its objectives are to provide definitions, models and notable examples of social prescribing schemes and to assess the means by which, and the extent to which, these schemes have been evaluated. The review found that just over 40% of the UK social prescribing schemes included in the review had been subject to evaluation. Around two-thirds of the evaluated schemes reviewed employed qualitative analysis of questionnaires, interviews, surveys or focus groups whereas the other third used statistical analysis of measures from reliable and validated clinical scales; three of these schemes employed randomised controlled trials (RCT) and another scheme compared physiological measures. Robust evaluation of social prescribing schemes is recommended, as nearly 60% of the programmes included in the review had not been subject to any formal means of assessment. The review found that social prescribing has produced benefits for participants including: Increased self esteem and confidence, increased sense of control and empowerment, improvements in psychological and mental wellbeing, and positive mood linked to a reduction in symptoms of anxiety and depression.
Link to full text: https://www.ucl.ac.uk/museums/research/museumsonprescription/Social-Prescribing-Review.pdf
106*

**Protocol for Review:**

**Husk K, et al. What approaches to social prescribing work, for whom, and in what circumstances? A protocol for a realist review. *Syst.Rev.* 2016;5: 93.**
**Background:** The use of non-drug, non-health-service interventions has been proposed as a cost-effective alternative to help those with long-term conditions manage their illness and improve their health and well-being. Interventions typically involve accessing activities run by the third sector or community agencies and may also be described as non-medical referral, community referral or social prescribing. To be effective, patients need to be "transferred" from the primary care setting into the community and to maintain their participation in activities. However, it is not currently known how and why these approaches enable which people under what circumstances to reach community services that may benefit their health and well-being.

**Methods:** Database searches and extensive searching of grey sources will be carried out in an attempt to find evidence associated with referral and retention in social prescribing. After initial scoping searches, two main phases of searching will be conducted: (a) will focus on the identification of programme theories to illustrate how approaches to social prescribing work for different people and in different contexts and (b) will consist of targeted searches to locate evidence to refine these candidate theories into configurations of the contexts in which populations and the main mechanisms outcomes are achieved. Inclusion criteria will initially be broad in order to develop a clear picture of the ways in which social prescriptions might operate but may iteratively become more focused in response to initially identified evidence, for example, in terms of the population group. An expert advisory group consisting of professionals working in a range of organisations involved in social prescribing will be convened to check the approaches in the review and provide real-life experience of social prescribing. Findings from the review will be disseminated to commissioners, published in a peer-reviewed journal and used to help refine an intervention model for an outdoor nature-based group intervention.
**Discussion:** This realist review will explore why mechanisms of social prescribing work, for what groups of people and their impact on enrolment, attendance and adherence to programmes. The use of realist approaches to detail the social prescribing process is novel and will offer insights into effective transfer of patients.
55*

**Randomised Controlled Trial Design:**

**Grant C, et al. A randomised controlled trial and economic evaluation of a referrals facilitator between primary care and the voluntary sector. *BMJ* 2000;320: 419-423.**
**Objectives:** To compare outcome and resource utilisation among patients referred to the Amalthea Project, a liaison organisation that facilitates contact between voluntary organisations and patients in primary care, with patients receiving routine general practitioner care.
**Design:** Randomised controlled trial with follow up at one and four months.
**Setting:** 26 general practices in Avon.
**Participants:** 161 patients identified by their general practitioner as having psychosocial problems.
**Main outcome measures:** Primary outcomes were psychological wellbeing (assessed with the hospital anxiety and depression scale) and social support (assessed using the Duke-UNC functional social support questionnaire). Secondary

outcomes were quality of life measures (the Dartmouth COOP/WONCA functional health assessment charts and the delighted-terrible faces scale), cost of contacts with the primary healthcare team and Amalthea Project, cost of prescribing in primary care, and cost of referrals to other agencies, over four months.
Results: The Amalthea group showed significantly greater improvements in anxiety (average difference between groups after adjustment for baseline −1.9, 95% confidence interval −3.0 to −0.7), other emotional feelings (average adjusted difference −0.5, −0.8 to −0.2), ability to carry out everyday activities (−0.5, −0.8 to −0.2), feelings about general health (−0.4, −0.7 to −0.1), and quality of life (−0.5, −0.9 to −0.1). No difference was detected in depression or perceived social support. The mean cost was significantly greater in the Amalthea arm than the general practitioner care arm (£153 *v* £133, P=0.025).
**Conclusion:** Referral to the Amalthea Project and subsequent contact with the voluntary sector results in clinically important benefits compared with usual general practitioner care in managing psychosocial problems, but at a higher cost.
Link to full text: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC27287/pdf/419.pdf
121*

**McLoughlin K, et al. INSPIRE (Investigating Social and Practical supports at the End of life): Pilot randomised trial of a community social and practical support intervention for adults with life-limiting illness. *BMC Palliative Care* 2015;14: 65.**
**Background:** For most people, home is the preferred place of care and death. Despite the development of specialist palliative care and primary care models of community based service delivery, people who are dying, and their families/carers, can experience isolation, feel excluded from social circles and distanced from their communities. Loneliness and social isolation can have a detrimental impact on both health and quality of life. Internationally, models of social and practical support at the end of life are gaining momentum as a result of the Compassionate Communities movement. These models have not yet been subjected to rigorous evaluation. The aims of the study described in this protocol are: (1) to evaluate the feasibility, acceptability and potential effectiveness of The Good Neighbour Partnership (GNP), a new volunteer-led model of social and practical care/support for community dwelling adults in Ireland who are living with advanced life-limiting illness; and (2) to pilot the method for a Phase III Randomised Controlled Trial (RCT)
**Design:** The INSPIRE study will be conducted within the Medical Research Council (MRC) Framework for the Evaluation of Complex Interventions (Phases 0-2) and includes an exploratory two-arm delayed intervention randomised controlled trial. Eighty patients and/or their carers will be randomly allocated to one of two groups: (I) Intervention: GNP in addition to standard care or (II) Control: Standard Care. Recipients of the GNP will be asked for their views on participating in both the study and the intervention. Quantitative and qualitative data will be gathered from both groups over eight weeks through

face-to-face interviews which will be conducted before, during and after the intervention. The primary outcome is the effect of the intervention on social and practical need. Secondary outcomes are quality of life, loneliness, social support, social capital, unscheduled health service utilisation, caregiver burden, adverse impacts, and satisfaction with intervention. Volunteers engaged in the GNP will also be assessed in terms of their death anxiety, death self efficacy, self-reported knowledge and confidence with eleven skills considered necessary to be effective GNP volunteers.
**Discussion:** The INSPIRE study addresses an important knowledge gap, providing evidence on the efficacy, utility and acceptability of a unique model of social and practical support for people living at home, with advanced life-limiting illness. The findings will be important in informing the development (and evaluation) of similar service models and policy elsewhere both nationally and internationally.
Link to full text: http://bmcpalliatcare.biomedcentral.com/articles/10.1186/s12904-015-0060-9
71*

**Cluster Randomised Controlled Trial Design:**

**Phillips G, et al. Well London Phase-1: results among adults of a cluster randomised trial of a community engagement approach to improving health behaviours and mental well-being in deprived inner-city neighbourhoods. *Journal of Epidemiology & Community Health* 2014;68 (7): 606-614.**
**Background:** We report the main results, among adults, of a cluster-randomised-trial of Well London, a community-engagement programme promoting healthy eating, physical activity and mental well-being in deprived neighbourhoods. The hypothesis was that benefits would be neighbourhood-wide, and not restricted to intervention participants. The trial was part of a multicomponent process/outcome evaluation which included non-experimental components (self-reported behaviour change amongst participants, case studies and evaluations of individual projects) which suggested health, well-being and social benefits to participants.
**Methods:** Twenty matched pairs of neighbourhoods in London were randomised to intervention/control condition. Primary outcomes (five portions fruit/vegetables/day; 5x30 m of moderate intensity physical activity/week, abnormal General Health Questionnaire (GHQ)-12 score and Warwick-Edinburgh Mental Well-being Scale (WEMWBS) score) were measured by postintervention questionnaire survey, among 3986 adults in a random sample of households across neighbourhoods.
**Results:** There was no evidence of impact on primary outcomes: healthy eating (relative risk [RR] 1.04, 95% CI 0.93 to

1.17); physical activity (RR: 1.01, 95% CI 0.88 to 1.16); abnormal GHQ12 (RR: 1.15, 95% CI 0.84 to 1.61); WEMWBS (mean difference [MD]: -1.52, 95% CI -3.93 to 0.88). There was evidence of impact on some secondary outcomes: reducing unhealthy eating-score (MD: -0.14, 95% CI -0.02 to 0.27) and increased perception that people in the neighbourhood pulled together (RR: 1.92, 95% CI 1.12 to 3.29).
**Conclusions:** The trial findings do not provide evidence supporting the conclusion of non-experimental components of the evaluation that intervention improved health behaviours, well-being and social outcomes. Low participation rates and population churn likely compromised any impact of the intervention. Imprecise estimation of outcomes and sampling bias may also have influenced findings. There is a need for greater investment in refining such programmes before implementation; new methods to understand, longitudinally different pathways residents take through such interventions and their outcomes, and new theories of change that apply to each pathway.
87*

**Non-randomised study designs:**

**Grayer J, et al. Facilitating access to voluntary and community services for patients with psychosocial problems: a before-after evaluation. *BMC Family Practice* 2008;9:27.**
**Background:** Patients with psychosocial problems may benefit from a variety of community, educational, recreational and voluntary sector resources, but GPs often under-refer to these through lack of knowledge and time. This study evaluated the acceptability and effectiveness of graduate primary care mental health workers (GPCMHWs) facilitating access to voluntary and community sector services for patients with psychosocial problems.
**Methods:** Patients with psychosocial problems from 13 general practices in London were referred to a GPCMHW Community Link scheme providing information and support to access voluntary and community resources. Patient satisfaction, mental health and social outcomes, and use of primary care resources, were evaluated.
**Results:** 108 patients consented to take part in the study. At three-month follow-up, 63 (58%) had made contact with a community service identified as suitable for their needs. Most were satisfied with the help provided by the GPCMHW in identifying and supporting access to a suitable service. There was a reduction in the number of patients with a probable mental health problem on the GHQ-12 from 83% to 52% (difference 31% (95% CI, 17% – 44%). Social adjustment improved and frequencies of primary care consultations and of prescription of psychotropic medications were reduced.

**Conclusion:** Graduates with limited training in mental health and no prior knowledge of local community resources can help patients with psychosocial problems access voluntary and community services, and patients value such a scheme. There was some evidence of effectiveness in reducing psychosocial and mental health problems.
Link to full text: http://bmcfampract.biomedcentral.com/articles/10.1186/1471-2296-9-27
125*

**Evaluations of existing services / pilot projects:**

**Age Concern Yorkshire & Humber. *Social prescribing. A model for partnership between primary care and the voluntary sector*. London: Age Concern; 2012.**
This report evaluates a pilot project between 12 GP practices and six local AgeUK's in Yorkshire and Humber. General practitioners referred 55 older people who had mild to moderate depression or were lonely and socially isolated to the Social Prescribing service at their local Age UK. The Social Prescribing service centred on an in-depth assessment of the older person's social, emotional and practical support needs. The local Age UK teams supported the older people to access the support they required. The service generated 62 referrals to Age UK services (including befriending, social groups, benefit checks and Fit as a Fiddle classes) and 34 referrals to statutory and other voluntary/ community organisations (community transport, handyman services and local community groups). A small number of older people supported through the Social Prescribing pilot project completed the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS), reporting an improvement in wellbeing from initial assessment to completion of the intervention.
Link to full text:
http://www.ageconcernyorkshireandhumber.org.uk/uploads/files/Social%20Prescribing%20Report%20new.pdf
1*

**Dayson C, et al. *From dependence to independence: emerging lessons from the Rotherham Social Prescribing Pilot. Final report and summary*. Sheffield: Sheffield Hallam University; 2013.**
This is the first report from the independent evaluation of the innovative Rotherham Social Prescribing Pilot being undertaken by the Centre for Regional Economic and Social Research (CRESR) at Sheffield Hallam University. The model is based around a core team consisting of a project manager and five Voluntary and Community Sector Advisors (VCSA's). The VCSA's provide the link between the pilot and multidisciplinary primary care teams. They received referrals from GP practices of eligible

patients and carers and made an assessment of their support needs before referring them on to appropriate VCS services. Outcomes of the project include reductions in hospital episodes amongst a cohort of patients, including reductions in A&E attendances, hospital inpatient admissions and outpatient appointments. Patients progress towards social outcomes was also measured using an 'outcome star' style tool designed specifically for this service. Although the evidence for this report was collected relatively early on in the pilot a number of examples of outcomes and impact have emerged. These include: patients becoming more independent and able to access social prescribing activities with less intensive support; patients becoming better at managing their long term condition themselves; patients and carers feeling less socially isolated and enjoying more social interaction; and a general improvement in the quality of care available to patients as a of result the case management approach.
Link to full text: http://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/rotherham-social-prescribing-final.pdf
27*

**Dayson C, Bashir N. *The social and economic impact of the Rotherham Social Prescribing Pilot. Main evaluation report*. Sheffield: Sheffield Hallam University; 2014.**
This report is the final output from the independent evaluation of the innovative Rotherham Social Prescribing Pilot undertaken by the Centre for Regional Economic and Social Research (CRESR) at Sheffield Hallam University. Between April 2012 and March 2014 1,607 patients were referred to the service, of whom 1,118 were referred on to funded VCS services. Outcomes evaluated included the project's impact on demand for hospital care. The analysis identified a clear overall trend that points to a reduction in patients' use of hospital resources after they had been referred to social prescribing. Patients referred to the social prescribing project also experienced improvements in their wellbeing and made progress towards better self-management of their condition. Analysis of well-being outcome data showed that, after 3-4 months, 83 per cent of these patients had experienced positive change in at least one outcome area. When the results were broken down by category they showed that progress was made against each outcome measure and that a majority of low-scoring patients had made progress.
Link to full text: http://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/social-economic-impact-rotherham.pdf
28*

**ERS Research & Consultancy, Beacon North Ltd. *Newcastle Social Prescribing Project Final Report*. Newcastle: ERS; 2013.**
This is the final report of the Newcastle Social Prescribing project, which was delivered over a 15 month period ceasing in March 2013, and was funded by NESTA's people powered health programme. The project aimed to support the development of a more community-based, preventive health care model, made up of locally accessible, social health care solutions delivered by a number of Linkwork Organisations. 6 GP practices across the West of Newcastle agreed to participate in the pilot, working in partnership with 5 voluntary and community sector organisations, each of which identified a linkworker through whom health professional referrals could be channelled. Overall 124 patients were referred to the project. This was below the original expectation of 200 referrals. The majority of referrals were made by 2 GP practices. The reason for referral varied widely from patient to patient but the majority of referrals related to physical health (52%) and mental wellbeing (49%). 76% of all referrals were White British and 70% female. The age profile showed referrals were made across all ages but the most common ages were 51-60 (27%) and 41-50 (19%). HWN Health Trainer Service (36%) and HWN Exercise Referral (35%) were the most common of these organisations, followed by Age UK (17%), Carers Centre (9%) and HWN Staying Steady (2%). 70% of all referrals did engage with a linkworker of which 91% set goals. Of those that set goals it is evident that 41% achieved their goals and 59% did not. Monitoring data showed 69% of patients, based on completed records, experienced an increase in SWEMWB score and that 64% have achieved an increase in confidence in managing their long term condition.
Link to full text: http://www.healthworksnewcastle.org.uk/wp-content/plugins/downloads-manager/upload/Social%20Prescribing%20Evaluation%20Report%20August%202013%20Final.pdf
131*

**Farenden C, et al. *Community navigation in Brighton and Hove: evaluation of a social prescribing pilot*. Brighton: Brighton and Hove Impetus; 2015.**
This report evaluates a social prescribing pilot project of community navigation in Brighton and Hove. The Community Navigation service was designed to increase the capacity of GP practices to meet the non-clinical needs of patients with long-term conditions and other vulnerabilities, e.g. low to moderate depression, bereavement, social isolation, financial difficulties. 393 patients were referred across 16 GP surgeries during the first 12 months of the pilot and 741 referrals were made to groups, services and activities patients would not have otherwise accessed. 84% of patients surveyed as part of the pilot projects evaluation experienced improvements in their sense of wellbeing. A higher percentage of patients with low to moderate mental health issues experienced improvement in their sense of wellbeing, 95% compared with the overall

percentage of 84%. This was linked to the supportive and understanding relationship with the Community Navigator, suggesting that Navigation is especially helpful in supporting people who are experiencing mental ill-health.
Link to full text:
http://nww2.nphs.wales.nhs.uk:8080/PharmaceuticalPHTDocs.nsf/($all)/122AC4A14AC0342A80257EAF004B57CE/$file/Evaluation%20of%20The%20Cwm%20Taf%20%20Social%20Prescribing%20Initiative.pdf
37*

**Friedli L, et al. *Evaluation of Dundee Equally Well Sources of Support: social prescribing in Maryfield*. Dundee: Dundee Partnership; 2012.**
This report sets out the findings from the evaluation of 'Sources of Support' (SOS), a pilot social prescribing scheme which forms part of the Dundee Equally Well test site and is set within Maryfield Medical Centre in Stobswell. The purpose of the social prescribing pilot was to develop, co-ordinate and evaluate a social prescribing scheme in order to: build local evidence of the benefits of social prescribing for patients and healthcare professionals, identify operational issues and solutions in running a practice based scheme, and gain local support for sustaining and rolling out the scheme. The scheme involved GP referral, followed by contact from a link worker and up to four link worker consultations to assess patients needs and identify appropriate community based information, support and/or activities. Where pre and post intervention data was available (WEMWBS and WSAS scale scores), evaluation showed that for those who completed the programme (n=16), patients showed a significant ($p<0.05$) improvement in mental wellbeing and functional activity.
Link to full text: http://www.dundeepartnership.co.uk/sites/default/files/Social%20prescribing%20evaluation%20report.pdf
41*

**Kimberlee R, et al. *Measuring the economic impact of Wellspring Healthy Living Centre's Social Prescribing Wellbeing Programme for low level mental health issues encountered by GP services*. Bristol: University of the West of England; 2014.**
This research evaluates the impacts of a holistic social prescribing Wellbeing Programme delivered by the Wellspring Healthy Living Centre, Bristol. As a holistic social prescribing approach it is representative of many third sector led interventions seeking to support local primary care services. It offers GP-referred patients 12 weeks of one-to-one support followed by 12 months of group support around a particular activity. Socio-economic impact was measured through Social Return on Investment (SROI) approach using pre and post intervention interviews using the Wellspring Wellbeing Questionnaire tool (WWQ). Data collected using the WWQ suggests that three months after a beneficiary's induction on the intervention

beneficiaries show statistically significant improvement in: PHQ9 (p=<0.001), GAD7(p=<0.001) , Friendship Scale (p=<0.001), ONS Wellbeing measures (item range p=<0.05 through to p= 0.001), perceived economic wellbeing (p=<0.0001) and the IPAQ items for moderate exercise. Analysis of GP contact times also suggest that for 6 in 10 beneficiaries there is a reduction in their GP attendance rates in the 12 months post intervention compared to the 12 months period prior to the referral. For 26% of beneficiaries it stayed the same and for 14% it actually increased. Having established the social impact of the Wellbeing Programme we calculate a Social Return on Investment ratio of £2.90:£1.
Link to full text: http://southwestforum.org.uk/sites/default/files/sitefiles/docs/swfprovingourvalue_uwe_wellspring.pdf
60*

**Morton L, et al. Improving wellbeing and self-efficacy by social prescription. *Public Health* 2015;129 (3): 286-289**.
This study evaluates a social prescribing initiative developed in partnership between a NHS and a Council's Cultural Partnerships Team. The project was funded by Creative Scotland and Fife Cultural Trust. A series of free courses were offered to clients with mild to moderate mental health difficulties such as anxiety/stress, depression and low self-esteem. 262 people attended courses between January 2013 and June 2014. Of these 136 participants returned pre and post questionnaires and were included in this evaluation. Participants completed three Clinical outcome measures (HADs, GSE & WEMWBS) and pre and post intervention scores for each of these measures were compared using a paired sample t-test. Findings for the HADs showed that the decrease in anxiety (t(135) ¼ 9.7, P < 0.001), 95% CI (2.2, 3.3) and depression were statistically significant (t (135) ¼ 7.7, P < 0.001), 95% CI (1.9, 3.2). For the GSE scale, the increase in Self Efficacy was statistically significant (t(135)¼_9.9, P < 0.001), 95% CI (_4.6, _3.0) and for the WEMWS the increase in Well-being was statistically significant (t(135) ¼ _8.8, P < 0.001), 95% CI (_8.1, _5.1). However, given that the majority of participants were also receiving therapeutic input and/or taking anti-depressant medication during this time it was not possible to establish from these findings whether attending the courses alone contributed to these changes. Therefore, the authors extracted the data from 23 participants who reported that they were not attending psychology or taking antidepressant medication when they completed the course. For this sub-group, a mean decrease in anxiety from 9.6 (SD ¼ 3.3) to 8.0 (SD ¼ 3.7), measured by the HADs, was significant (t(22) ¼ 4.2, P < 0.001), 95% CI (0.87, 2.5). There was also a statistically significant increase in Self Efficacy, as measured by the GSE scale, (t(22) ¼ _2.6, P < 0.05), 95% CI (_4.5, _0.5) with mean scores increasing from 27.9 (SD ¼ 5.4) to 30.4 (SD ¼ 6.6), and also for well-being, as measured by the WEMWS, with mean scores increasing from 42.5 (SD ¼ 7.5) to 45.6 (SD ¼ 7.8), (t(22) ¼ _2.4, P < 0.05), 95% CI (_5.6, _0.5). These findings provide encouraging support for the

benefits of Social Prescribing and indicate this approach can contribute to improvement in well-being, self efficacy and a reduction in anxiety and depression.
75*

**Scottish Government. *Links project report. Developing connections between general practices and their communities*. Edinburgh: Scottish Government; 2012.**
This report evaluates the link project; a six month project sponsored by the Scottish Government's Self Management Programme, Long term Conditions Unit and Long Term Conditions Collaborative (LTCC). The aim of the project was to develop and test a sustainable local model to improve links between general practice and community support by signposting patients to local services. During 5 days of recording in January and 3 days in February in the Glasgow area, 81 and 50 individuals respectively were signposted to community resources. A total of 83 (62%) of these patients were followed up by staff in February and March. Of those, 50 (60%) had made contact with the service. Of the 50 who made contact, 35 (70%) were still using the resource 4 – 6 weeks later.
Link to full text: http://www.gov.scot/Resource/0039/00393257.pdf
95*

**Thirlwall C. *Healthy Connections Stewartry: Final Evaluation. 'Test of Change' Project Report.* Dumfries: NHS Dumfries & Galloway; 2015.**
This report refers to Healthy connections Stewartry, a 'test of change' project geared towards testing the impact of social prescribing on anti-depressant prescribing rates, measuring the impact on individual wellbeing, and testing the benefits and impacts of partnership working. Evaluation from WEMWBS questionnaires as part of the programme showed a shift from 31.5 before signposting to 40.2 after, showing an increase of 8.7. However this is only based on data from 6 completed forms. The evaluation also notes that high numbers of individuals were on prescribed anti-depressants prior to or at the point of signposting into social prescribing practices and were therefore experiencing a level of low mood. Although it is still to be determined how many of these individuals accessed a social prescribing intervention, initial data shows that 14 individuals are no longer on anti-depressants after the point of signposting.
Link to full text: http://www.nhsdg.scot.nhs.uk/Departments_and_Services/Putting_You_First/PYF_Files/Social_Prescribing.pdf
105*

## 2. Referral to a community arts programme:

**Non-randomised study designs:**

**Vogelpoel N, Jarrold K. Social prescription and the role of participatory arts programmes for older people with sensory impairments. *Journal of Integrated Care* 2014;22 (2): 39-50**.
**Purpose:** The purpose of this paper is to describe the benefits of a social prescribing service for older people with sensory impairments experiencing social isolation. The paper draws on the findings from a 12-week programme run by Sense, a voluntary sector organisation, and illustrates how integrated services, combining arts-based participation and voluntary sector support, can create positive health and wellbeing outcomes for older people.
**Design/methodology/approach:** The research took a mixed-methodological approach, conducting and analysing data from interviews and dynamic observation proformas with facilitators and quantitative psychological wellbeing scores with participants throughout the course of the programme. Observations and case study data were also collected to complement and contextualise the data sets.
**Findings:** The research found that participatory arts programmes can help combat social isolation amongst older people with sensory impairments and can offer an important alliance for social care providers who are required to reach more people under increasing pecuniary pressures. The research also highlights other benefits for health and wellbeing in the group including increased self-confidence, new friendships, increased mental wellbeing and reduced social isolation.
Research limitations/implications: The research was based on a sample size of 12 people with sensory impairments and therefore may lack generalisability. However, similar outcomes for people engaging in participatory arts through social prescription are documented elsewhere in the literature.
**Practical implications:** The paper includes implications for existing health and social care services and argues that delivering more integrated services that combine health and social care pathways with arts provision have the potential to create social and medical health benefits without being care/support resource heavy.
**Originality/value:** This paper fulfils a need to understand and develop services that are beneficial to older people who become sensory impaired in later life. This cohort is growing and, at present, there are very few services for this community at high risk of social isolation.
109*

*original reference number from include/exclude table

**Hacking S, et al. Evaluating the impact of participatory art projects for people with mental health needs. *Health & Social Care in the Community* 2008;16(6): 638-648.**
Participatory art projects for people with mental health needs typically claim outcomes such as improvements in confidence, self-esteem, social participation and mental health. However, such claims have rarely been subjected to robust outcome research. This paper reports outcomes from a survey of 44 female and 18 male new art project participants attending 22 art projects in England, carried out as part of a national evaluation. Outcomes were quantified through self-completed questionnaires on first entry to the project, during January to March of 2006, and 6 months later. The questionnaires included three measures: empowerment, mental health [Clinical Outcomes in Routine Evaluation (CORE)] and social inclusion. Paired t-tests were used to compare overall change, and mixed model repeated measures analysis of variance to compare subgroups, including age, gender, educational level, mental health and level of participation. Results showed significant improvements in empowerment (P = 0.01), mental health (P = 0.03) and social inclusion (P = 0.01). Participants with higher CORE scores, no new stress in their lives and positive impressions of the impact of arts on their life benefited most over all three measures. Positive impressions of the impact of arts were significantly associated with improvement on all three measures, but the largest effect was for empowerment (P = 0.002) rather than mental health or social inclusion. This study suggests that arts participation positively benefits people with mental health difficulties. Arts participation increased levels of empowerment and had potential to impact on mental health and social inclusion.
137*

**Evaluations of existing services / pilot projects:**

**Allan J. *Arts on prescription: arts-based social prescribing for better mental wellbeing*. London: NCVO; 2015.**
This report evaluates three partnerships where arts activities run by the third sector have been prescribed to individuals experiencing mental health issues. Colour your life; a social prescribing project across County Durham, the 'inspiring minds' arts on prescription scheme run by arts and wellbeing charity Start in Salford, and creative alternatives; Sefton. Key outcomes from the projects include; increased treatment options available to those experiencing mental wellbeing issues. Reduced reliance on antidepressant or tranquiliser medications. Reduced amount of GP contact time devoted to people experiencing mental wellbeing issues. Increased self-esteem and confidence amongst participants and improved quality of life. Increased transferable skills for participants, including employability skills, and increased participation in arts and cultural activities.

Link to full text: https://www.ncvo.org.uk/images/images/practical_support/public-services/cultural-commissioning/AonP-17-11-15.pdf
2*

**Brown K, Pidgeon L. *Arts on Prescription North West Leicestershire Evaluation Report*. Leicester: North West Leicestershire District Council; 2016.**
This report is an evaluation of an arts on prescription pilot project funded by North West Leicestershire District Councils 'staying healthy partnership' grant. It was planned and delivered by Beauty and Utility Arts and Little Bird SOS, both local arts for health social enterprises, and took place at Measham Medical Unit (MMU) between April and June 2016. The project was delivered in two blocks of six workshops, with a three week midpoint break for review. Participants, all patients at MMU, were referred to the project by practice GPs, self referred via information on project posters, or came through Improving Access to Psychological Therapies (IAPT), an NHS programme of talking therapy treatments recommended by the National Institute for Health and Clinical Excellence (NICE) which support frontline mental health services in treating depression and anxiety disorders. All participants presented with some form of low level mental ill health, including stress, anxiety and depression, therefore meeting criteria for accessing the project. In total 15 referrals were made and 12 completed the project (80%). All participants were asked to complete a pre and post art intervention questionnaire. Pre and post intervention WEMBW score, GAD-7 scores and PHQ-9 scores were collected. Across all measures, there was a mean overall improvement in wellbeing, anxiety and depression scores following the art intervention period. However, the numbers participating were not enough for this to be statistically significant.
Link to full text: http://www.beautyandutilityarts.co.uk/wp-content/uploads/2014/07/Art-on-Prescription-evaluation-FINAL-Report-Oct-2016-1.pdf
133*

**Crone D, et al. *Art Lift, Gloucestershire: Evaluation Report: Executive Summary.* Gloucester*:* University of Gloucester; 2011**
This report evaluates the Art Lift programme, a primary care based art intervention where health professionals refer patients for a ten week art programme, usually delivered in a primary care setting. Patients are referred for a range of reasons (to reduce stress, anxiety or depression; to improve self esteem or confidence; to increase social networks; alleviate symptom of chronic pain or illness; distract from behaviour related health issues; improve overall wellbeing). The ten week intervention involved art activities delivered by eight artists within GP surgeries, including working with words, ceramics, drawing, mosaic

and painting. The evaluation was a mixed methods design; the quantitative aspect investigated the nature of all referrals and the effect of the intervention on personal subjective wellbeing, whilst the qualitative aspect focused on the experiences and opinions of the artists, health professionals and patients involved in Art Lift. The quantitative phase investigated the demographics of those initially referred (n=202) and their progress through the intervention. 77.7% of those who were referred attended (i.e., attended the initial planned session) and 49.5% of those referred completed (i.e., attended the final planned session). From those who were referred and attended the first session of the intervention, 63.7% of these were completers. The effect of the art classes on the participants' personal subjective wellbeing was measured by administering a wellbeing scale (WEMWBS) pre- and post-intervention; a significant improvement in wellbeing was found pre- and post- the ten week intervention (7 item: 19 ± 5 vs 22 ± 5; 14 item: 38 ± 10 vs 44 ± 9; t = -6.961, df = 83, p<0.001, two tailed). Therefore, for those that completed there was a significant improvement in wellbeing, after the ten week intervention.
Link to full text:
http://www.ahsw.org.uk/userfiles/GPs%20&%20PCTs%20Newsletters/GPs%20SIG%20files/University_of_Gloucestershire_Evaluation_of_Art_Lift_Exec_Summay_Crone_et_al._2011.pdf
134*

**Sefton MBC and NHS Sefton. *Arts on Prescription in Sefton*. Netherton: Creative Alternatives; 2009.**
This report is an evaluation of the creative alternatives programme; an innovative 'arts on prescription' programme that offers a range of stimulating and challenging creative activities to those in Sefton experiencing mild to moderate depression, stress or anxiety. The evaluation found highly significant reductions in both depression and anxiety amongst the client population. The Hospital Anxiety and Depression Scale showed a decrease in the symptoms of depression in 65% of clients, a decrease of anxiety in 65% of clients and a dual decrease in the symptoms of anxiety and depression in 48% of clients - results that are classed as statistically highly significant. The Dartmouth COOP Chart, which assesses general health, showed highly significant improvements in the clients' feelings, daily activities, social activities and overall quality of life post programme participation. The Creative Alternatives Lifestyle Questionnaire identified 75% of clients as reporting an improvement in their mental health. The Lifestyle Questionnaire also monitored the extent to which clients alter levels of anti-depressant or tranquiliser medication during and post programme participation. 27% of clients reported a reduction in medication and 11% of clients had stopped taking medication completely. These figures indicate a significant improvement in mental health and well-being.
Link to full text: http://www.artsforhealth.org/resources/CA%20Report%202009.pdf
129*

**White M, Salamon E. *An interim evaluation of the 'Arts For Well-being' social prescribing scheme in County Durham.* Durham: Durham University; 2011.**

This report evaluates County Durham Primary Care Trusts Arts for Well-being programme and includes an interim assessment of how effectively the willing provider service model was working, informed by the nature and extent of intermediate indicators of benefit identified by service users participating in the arts activities. It covers the first half of the scheme in its 18 month pilot phase, which commenced in September 2009. Three research questions were identified: 1) Does the overall model work, and does it suggest a natural selection of which individual arts in health initiatives work best? 2) What can be learned about user experiences and impact, drawing on data from the Warwick-Edinburgh Mental Well-being scale that is currently being administered to participants and from process evaluation data? 3) What do users' comments and narratives about the service suggest about its wider impact? Findings included PCP data which showed that two thirds of participants improved against the WEMWBS points "I've been feeling useful" and "I've been feeling relaxed". Coding of the assessment forms showed "positive relationship with artist/teacher" and "enjoyment" to be the most frequently cited responses. Focus groups were also undertaken, with evidence from these suggesting that the project benefited participants and carers by providing opportunities for them to: develop new artistic skills and further develop old ones, develop their inter-personal skills and social networks, and become absorbed in a stimulating and creative activity, which provided them with respite from their stressful daily lives and their illnesses.

114*

## 3. Referral to a community exercise programme:

### Systematic reviews with meta-analysis:

**Barker AL, et al. Effectiveness of aquatic exercise for musculoskeletal conditions: a meta-analysis. *Archives of Physical Medicine & Rehabilitation* 2014; 95(9):1776-1786.**
**Objective:** To investigate the effectiveness of aquatic exercise in the management of musculoskeletal conditions.
**Data Sources:** A systematic review was conducted using Ovid MEDLINE, Cumulative Index to Nursing and Allied Health Literature, Embase, and The Cochrane Central Register of Controlled Trials from earliest record to May 2013.
**Study selection:** We searched for randomized controlled trials (RCTs) and quasi-RCTs evaluating aquatic exercise for adults with musculoskeletal conditions compared with no exercise or land-based exercise. Outcomes of interest were pain, physical function, and quality of life. The electronic search identified 1199 potential studies. Of these, 1136 studies were excluded based on title and abstract. A further 36 studies were excluded after full text review, and the remaining 26 studies were included in this review.
**Data extraction:** Two reviewers independently extracted demographic data and intervention characteristics from included trials. Outcome data, including mean scores and SDs, were also extracted.
**Data Synthesis:** The Physiotherapy Evidence Database (PEDro) Scale identified 20 studies with high methodologic quality (PEDro score ≥6). Compared with no exercise, aquatic exercise achieved moderate improvements in pain (standardized mean difference [SMD] = -.37; 95% confidence interval [CI], -.56 to -.18), physical function (SMD = .32; 95% CI, .13 -.51), and quality of life (SMD = .39; 95% CI, .06 - .73). No significant differences were observed between the effects of aquatic and land-based exercise on pain (SMD = -.11; 95% CI, -.27 to .04), physical function (SMD = -.03; 95% CI, -.19 to .12), or quality of life (SMD = -.10; 95% CI, -.29 to .09).
**Conclusions:** The evidence suggests that aquatic exercise has moderate beneficial effects on pain, physical function, and quality of life in adults with musculoskeletal conditions. These benefits appear comparable across conditions and with those achieved with land-based exercise. Further research is needed to understand the characteristics of aquatic exercise programs that provide the most benefit.
Link to full text: http://www.archives-pmr.org/article/S0003-9993(14)00288-3/pdf
122*

**Campbell F, et al. *A systematic review and economic evaluation of exercise referral schemes in primary care: a short report*. Sheffield: SCHARR; 2014.**
In 2006, NICE commented that there is insufficient evidence for ERS and recommended that the NHS should make ERS available only as part of a controlled trial. Pavey *et al.,* updated the evidence available with the inclusion of four additional trials, and also concluded that there remains very limited support for the potential role of ERS in positively improving levels of physical activity. There was little evidence that interventions incorporated strategies that enabled participants to achieve a sustainable active lifestyle, and very little reference to the development of theoretically based interventions that draw on successful behaviour change techniques. This update supports and reinforces these findings. The additional data from a large, well designed trial, conducted in the UK, which incorporated motivational interviewing, found that ERS improved levels of physical activity, but this was of borderline statistical significance.
Link to full text: https://www.nice.org.uk/guidance/ph54/documents/review-1-a-systematic-review-and-economic-evaluation-of-exercise-referral-schemes-in-primary-care-a-short-report2
18*

**Desveaux L, et al. Community-based exercise programs as a strategy to optimize function in chronic disease: a systematic review. *Medical Care* 2014;52(3): 216-226.**
**Background:** Chronic diseases are the leading cause of death and disability worldwide Preliminary evidence suggests that community-based exercise (CBE) improves functional capacity (FC) and health-related quality of life (HRQL).
**Objective:** To describe the structure and delivery of CBE programs for chronic disease populations and compare their impact on FC and HRQL to standard care.
Research Design: Randomized trials examining CBE programs for individuals with stroke, chronic obstructive pulmonary disease, osteoarthritis, diabetes, and cardiovascular disease were identified. Quality was assessed using the Cochrane risk of bias tool. Meta-analyses were conducted using Review Manager 5.1. The protocol was registered on PROSPERO (CRD42012002786).
**Results:** Sixteen studies (2198 individuals, mean age 66.8±4.9 y) were included to describe program structures, which were comparable in their design and components, irrespective of the chronic disease. Aerobic exercise and resistance training were the primary interventions in 85% of studies. Nine studies were included in the meta-analysis. The weighted mean difference for FC, evaluated using the 6-minute walk test, was 41.7 m (95% confidence interval [CI], 20.5-62.8). The standardized mean difference for all FC measures was 0.18 (95% CI, 0.05-0.3). The standardized mean difference for the physical component of HRQL measures was 0.21 (95% CI, 0.05-0.4) and 0.38 (95% CI, 0.04-0.7) for the total score.

**Conclusions:** CBE programs across chronic disease populations have similar structures. These programs appear superior to standard care with respect to optimizing FC and HRQL in individuals with osteoarthritis; however, the effect beyond this population is unknown. Long-term sustainability of these programs remains to be established.
124*

**Hendry M, et al. *A systematic review of exercise referral (StROLERS)*. Cardiff: All Wales Alliance for Research and Development in Health and Social Care; 2006.**
This systematic review was commissioned through the AWARD programme as a call-off contract to inform a new national exercise referral scheme for Wales. Sixteen studies were included in the review. These comprised six RCTs, three observational studies, six process evaluations and one qualitative study. In addition one RCT and two process evaluations incorporated a qualitative component. In the six RCTs, there was a large variation in participation rates for exercise intervention, from 26% to 100%. There was a statistically significant increase at 8-12 months in the numbers of participants doing moderate exercise with a combined relative risk of 1.18 [95% Confidence Intervals 1.04 to 1.35]. Physiological outcomes were measured in three RCT's. These only showed statistically significant improvements in some outcome measures such as skin fold thickness, and there was no evidence of an increase in cardiovascular fitness. Psychological outcomes were measured in three RCTs. Improvement in physical self-perception and perceived barriers to exercise were reduced in one study.
51*

**Krogh J, et al. The effect of exercise in clinically depressed adults: systematic review and meta-analysis of randomized controlled trials*. Journal of Clinical Psychiatry* 2011;72(4) 529-538.**
**Objective:** To assess the effectiveness of exercise in adults with clinical depression.
**Data sources:** The databases CINAHL, Embase, Cochrane Database of Systematic reviews, Cochrane Controlled Trials Register, MEDLINE, and PsycINFO were searched (1806-2008) using medical subject headings (MeSH) and text word terms depression, depressive disorder and exercise, aerobic, non-aerobic, physical activity, physical fitness, walk*, jog*, run*, bicycling, swim*, strength, and resistance.
**Study selection:** Randomized trials including adults with clinical depression according to any diagnostic system were included.
**Data extraction:** Two investigators evaluated trials using a prepiloted structured form.

**Data synthesis:** Thirteen trials were identified that fulfilled the inclusion criteria. Eight had adequate allocation concealment, 6 had a blinded outcome, and 5 used intention-to-treat analyses. The pooled standardized mean difference (SMD) calculated using a random-effects model was -0.40 (95% CI, -0.66 to -0.14), with evidence of heterogeneity between trials (I (2) = 57.2%, P = .005). There was an inverse association between duration of intervention and the magnitude of the association of exercise with depression (P = .002). No other characteristics were related to between-study heterogeneity. Pooled analysis of 5 trials with long-term follow-up (i.e., that examined outcomes beyond the end of the intervention) suggested no long-term benefit (SMD, -0.01; 95% CI, -0.28 to 0.26), with no strong evidence of heterogeneity in this pooled analysis (I (2) = 23.4%, P = .27). There was no strong statistical evidence for small study bias (P > .27). Only 3 studies were assessed as high quality (adequately concealed random allocation, blinded outcome assessment, and intention-to-treat analysis). When we pooled results from these, the estimated beneficial effect of exercise was more modest (SMD, -0.19; 95% CI, -0.70 to 0.31) than the pooled result for all 13 studies, with no strong evidence of benefit.
**Conclusions:** Our results suggest a short-term effect of exercise on depression: on average, depression scores 0.4 of a standard deviation lower in clinically depressed patients randomly assigned to an exercise intervention at the end of that intervention compared to those randomly assigned to a none exercise group. There is little evidence of a long-term beneficial effect of exercise in patients with clinical depression.
126*

**Pavey T, et al. Levels and predictors of exercise referral scheme uptake and adherence: a systematic review. *Journal of Epidemiology & Community Health* 2012;66: 737-744**.
**Background:** The effectiveness of exercise referral schemes (ERS) is influenced by uptake and adherence to the scheme. The identification of factors influencing low uptake and adherence could lead to the refinement of schemes to optimise investment.
**Objectives:** To quantify the levels of ERS uptake and adherence and to identify factors predictive of uptake and adherence.
**Methods:** A systematic review and meta-analysis was undertaken. MEDLINE, EMBASE, PsycINFO, Cochrane Library, ISI WOS, SPORTDiscus and ongoing trial registries were searched (to October 2009) and included study references were checked. Included studies were required to report at least one of the following: (1) a numerical measure of ERS uptake or adherence and (2) an estimate of the statistical association between participant demographic or psychosocial factors (eg, level of motivation, self-efficacy) or programme factors and uptake or adherence to ERS.
Results: Twenty studies met the inclusion criteria, six randomised controlled trials (RCTs) and 14 observational studies. The pooled level of uptake in ERS was 66% (95% CI 57% to 75%) across the observational studies and 81% (95% CI 68% to 94%) across the RCTs. The pooled level of ERS adherence was 49% (95% CI 40% to 59%) across the observational studies

and 43% (95% CI 32% to 54%) across the RCTs. Few studies considered anything other than gender and age. Women were more likely to begin an ERS but were less likely to adhere to it than men. Older people were more likely to begin and adhere to an ERS.
**Limitations:** Substantial heterogeneity was evident across the ERS studies. Without standardised definitions, the heterogeneity may have been reflective of differences in methods of defining uptake and adherence across studies.
**Conclusions:** To enhance our understanding of the variation in uptake and adherence across ERS and how these variations might affect physical activity outcomes, future trials need to use quantitative and qualitative methods.
83*

**Pavey TG, et al. Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: systematic review and meta-analysis. *BMJ* 2011;343: d6462**.
**Objective:** To assess the impact of exercise referral schemes on physical activity and health outcomes.
**Design:** Systematic review and meta-analysis.
Data sources Medline, Embase, PsycINFO, Cochrane Library, ISI Web of Science, SPORTDiscus, and ongoing trial registries up to October 2009. We also checked study references.
**Study selection:** Design: randomised controlled trials or non-randomised controlled (cluster or individual) studies published in peer review journals. Population: sedentary individuals with or without medical diagnosis. Exercise referral schemes defined as: clear referrals by primary care professionals to third party service providers to increase physical activity or exercise, physical activity or exercise programmes tailored to individuals, and initial assessment and monitoring throughout programmes. Comparators: usual care, no intervention, or alternative exercise referral schemes.
**Results:** Eight randomised controlled trials met the inclusion criteria, comparing exercise referral schemes with usual care (six trials), alternative physical activity intervention (two), and an exercise referral scheme plus a self determination theory intervention (one). Compared with usual care, follow-up data for exercise referral schemes showed an increased number of participants who achieved 90-150 minutes of physical activity of at least moderate intensity per week (pooled relative risk 1.16, 95% confidence intervals 1.03 to 1.30) and a reduced level of depression (pooled standardised mean difference −0.82, −1.28 to −0.35). Evidence of a between group difference in physical activity of moderate or vigorous intensity or in other health outcomes was inconsistent at follow-up. We did not find any difference in outcomes between exercise referral schemes and the other two comparator groups. None of the included trials separately reported outcomes in individuals with specific medical diagnoses. Substantial heterogeneity in the quality and nature of the exercise referral schemes across studies might have contributed to the inconsistency in outcome findings.

**Conclusions:** Considerable uncertainty remains as to the effectiveness of exercise referral schemes for increasing physical activity, fitness, or health indicators, or whether they are an efficient use of resources for sedentary people with or without a medical diagnosis.
Link to full text: http://www.bmj.com/content/bmj/343/bmj.d6462.full.pdf
84*

**Pavey T, et al. *The clinical effectiveness and cost effectiveness of exercise referral schemes: a systematic review and economic evaluation*. HTA 15(44). Southampton: NETSCC; 2011.**
**Background:** Exercise referral schemes (ERS) aim to identify inactive adults in the primary-care setting. The GP or health-care professional then refers the patient to a third-party service, with this service taking responsibility for prescribing and monitoring an exercise programme tailored to the needs of the individual.
Objective: To assess the clinical effectiveness and cost-effectiveness of ERS for people with a diagnosed medical condition known to benefit from physical activity (PA). The scope of this report was broadened to consider individuals without a diagnosed condition who are sedentary.
**Data Sources:** MEDLINE; EMBASE; PsycINFO; The Cochrane Library, ISI Web of Science; SPORTDiscus and ongoing trial registries were searched (from 1990 to October 2009) and included study references were checked.
**Methods:** Systematic reviews: the effectiveness of ERS, predictors of ERS uptake and adherence, and the cost-effectiveness of ERS; and the development of a decision-analytic economic model to assess cost-effectiveness of ERS.
**Results:** Seven randomised controlled trials (UK, n = 5; non-UK, n = 2) met the effectiveness inclusion criteria, five comparing ERS with usual care, two compared ERS with an alternative PA intervention, and one to an ERS plus a self-determination theory (SDT) intervention. In intention-to-treat analysis, compared with usual care, there was weak evidence of an increase in the number of ERS participants who achieved a self-reported 90-150 minutes of at least moderate-intensity PA per week at 6-12 months' follow-up [pooled relative risk (RR) 1.11, 95% confidence interval 0.99 to 1.25]. There was no consistent evidence of a difference between ERS and usual care in the duration of moderate/vigorous intensity and total PA or other outcomes, for example physical fitness, serum lipids, health-related quality of life (HRQoL). There was no between-group difference in outcomes between ERS and alternative PA interventions or ERS plus a SDT intervention. None of the included trials separately reported outcomes in individuals with medical diagnoses. Fourteen observational studies and five randomised controlled trials provided a numerical assessment of ERS uptake and adherence (UK, n = 16; non-UK, n = 3). Women and older people were more likely to take up ERS but women, when compared with men, were less likely to adhere. The four previous economic evaluations identified suggest ERS to be a cost-effective intervention. Indicative incremental cost

per quality-adjusted life-year (QALY) estimates for ERS for various scenarios were based on a de novo model-based economic evaluation. Compared with usual care, the mean incremental cost for ERS was £169 and the mean incremental QALY was 0.008, with the base-case incremental cost-effectiveness ratio at £20,876 per QALY in sedentary people without a medical condition and a cost per QALY of £14,618 in sedentary obese individuals, £12,834 in sedentary hypertensive patients, and £8414 for sedentary individuals with depression. Estimates of cost-effectiveness were highly sensitive to plausible variations in the RR for change in PA and cost of ERS.
**Limitations:** We found very limited evidence of the effectiveness of ERS. The estimates of the cost-effectiveness of ERS are based on a simple analytical framework. The economic evaluation reports small differences in costs and effects, and findings highlight the wide range of uncertainty associated with the estimates of effectiveness and the impact of effectiveness on HRQoL. No data were identified as part of the effectiveness review to allow for adjustment of the effect of ERS in different populations.
**Conclusions:** There remains considerable uncertainty as to the effectiveness of ERS for increasing activity, fitness or health indicators or whether they are an efficient use of resources in sedentary people without a medical diagnosis. We failed to identify any trial-based evidence of the effectiveness of ERS in those with a medical diagnosis. Future work should include randomised controlled trials assessing the clinical effectiveness and cost-effectiveness of ERS in disease groups that may benefit from PA.
Link to full text: http://www.journalslibrary.nihr.ac.uk/hta/volume-15/issue-44
85*

**Williams NH, et al. Effectiveness of exercise-referral schemes to promote physical activity in adults: systematic review. *British Journal of General Practice* 2007;57 (545): 979-986.**
**Background:** Despite the health benefits of physical activity, most adults do not take the recommended amount of exercise.
**Aim:** To assess whether exercise-referral schemes are effective in improving exercise participation in sedentary adults.
Design of study: Systematic review.
**Method:** Studies were identified by searching MEDLINE, CINAHL, EMBASE, AMED, PsycINFO, SPORTDiscus, The Cochrane Library and SIGLE until March 2007. Randomised controlled trials (RCTs), observational studies, process evaluations and qualitative studies of exercise-referral schemes, defined as referral by a primary care clinician to a programme that encouraged physical activity or exercise were included. RCT results were combined in a meta-analysis where there was sufficient homogeneity.
**Results:** Eighteen studies were included in the review. These comprised six RCTs, one non-randomised controlled study, four

observational studies, six process evaluations and one qualitative study. In addition, two of the RCTs and two of the process evaluations incorporated a qualitative component. Results from five RCTs were combined in a meta-analysis. There was a statistically significant increase in the numbers of participants doing moderate exercise with a combined relative risk of 1.20 (95% confidence intervals = 1.06 to 1.35). This means that 17 sedentary adults would need to be referred for one to become moderately active. This small effect may be at least partly due to poor rates of uptake and adherence to the exercise schemes.
**Conclusion:** Exercise-referral schemes have a small effect on increasing physical activity in sedentary people. The key challenge, if future exercise-referral schemes are to be commissioned by the NHS, is to increase uptake and improve adherence by addressing the barriers described in these studies.
Link to full text: http://www.apho.org.uk/resource/view.aspx?RID=105856
116*

**Systematic reviews without meta-analysis:**

**Gidlow C, et al. Attendance of exercise referral schemes in the UK: a systematic review. *Health Education Journal* 2005;64(2): 168-186**.
**Objective:** The aim of this review was to explore attendance of UK exercise referral schemes (ERS), who attends them, why participants drop out of schemes and to compare evaluations of existing ERS with randomised controlled trials (RCTs).
**Design:** Systematic review.
**Method:** A search of major databases was conducted to identify studies investigating ERS interventions that were based in primary care in the UK, reported attendance-related outcomes and were published in peer-reviewed journals.
**Results:** Five evaluations of existing ERS and four RCTs met the inclusion criteria. Method of participant recruitment was the only marked difference between the two types of study. In RCTs and evaluations, rates of referral uptake and attendance were varied but comparable. Attendance was generally poor; approximately eighty per cent of participants who took up referral dropped out before the end of programmes. More women than men took up referral (60 vs. 40 per cent) but there was no evidence of higher attendance in women. None of the participant characteristics reported were consistently associated with attendance. Most of the reasons for attrition and negative comments from participants related to practical problems associated with attending leisure facilities.

**Conclusion:** The present review highlighted a high level of attrition in ERS. However, poor measurement and reporting of attendance, and inadequate participant profiling, prevented us from identifying which sections of the population were most likely to attend or drop out. Adequate data collection regimens, beginning at the point of referral would enable us to learn whom exactly ERS are proving successful for.
45*

**Morgan O. Approaches to increase physical activity: reviewing the evidence for exercise-referral schemes. *Public Health* 2005;119: 361-370.**
**Objective:** To review current evidence of effectiveness for exercise-referral schemes.
**Methods:** Studies were identified from MEDLINE 1966-2002, EMBASE 1980-2002 and CINHAL 1982-2002 and bibliographies of relevant papers.
Inclusion criteria: Interventions providing access to exercise activities and/or facilities, experimental or quasi-experimental studies, studies with a control group, interventions based in a primary care setting, and interventions including an exercise component with measures of physical activity levels.
**Conclusions:** Exercise-referral schemes appear to increase physical activity levels in certain populations, namely individuals who are not sedentary but already slightly active, older adults and those who are overweight (but not obese). However, increases in the level of physical activity may not be sustained over time. Further studies are required to assess effectiveness in a range of populations and for different activities, and to find strategies to increase long-term adherence.
74*

**Randomised Controlled Trial Design:**

**Edwards RT, et al. Cost-effectiveness of a national exercise referral programme for primary care patients in Wales: results of a randomised controlled trial. *BMC Public Health* 2013;13: 1021.**
**Background:** A recent HTA review concluded that there was a need for RCTs of exercise referral schemes (ERS) for people with a medical diagnosis who might benefit from exercise. Overall, there is still uncertainty as to the cost-effectiveness of ERS. Evaluation of public health interventions places challenges on conventional health economics approaches. This economic evaluation of a national public health intervention addresses this issue of where ERS may be most cost effective through

subgroup analysis, particularly important at a time of financial constraint.
**Method:** This economic analysis included 798 individuals aged 16 and over (55% of the randomised controlled trial (RCT) sample) with coronary heart disease risk factors and/or mild to moderate anxiety, depression or stress. Individuals were referred by health professionals in a primary care setting to a 16 week national exercise referral scheme (NERS) delivered by qualified exercise professionals in local leisure centres in Wales, UK. Health-related quality of life, health care services use, costs per participant in NERS, and willingness to pay for NERS were measured at 6 and 12 months.
**Results:** The base case analysis assumed a participation cost of 385 per person per year, with a mean difference in QALYs between the two groups of 0.027. The incremental cost-effectiveness ratio was 12,111 per QALY gained. Probabilistic sensitivity analysis demonstrated an 89% probability of NERS being cost-effective at a payer threshold of 30,000 per QALY. When participant payments of 1 and 2 per session were considered, the cost per QALY fell from 12,111 (base case) to 10,926 and 9,741, respectively. Participants with a mental health risk factor alone or in combination with a risk of chronic heart disease generated a lower ICER (10,276) compared to participants at risk of chronic heart disease only (13,060).
**Conclusion:** Results of cost-effectiveness analyses suggest that NERS is cost saving in fully adherent participants. Though full adherence to NERS (62%) was higher for the economics sample than the main sample (44%), results still suggest that NERS can be cost-effective in Wales with respect to existing payer thresholds particularly for participants with mental health and CHD risk factors.
Link to full text: http://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-13-1021
33*

**Elley CR, et al. Cost-effectiveness of exercise on prescription with telephone support among women in general practice over 2 years. *British Journal of Sports Medicine* 2011;45 (15): 1223-1229**.
**Aim:** To assess the cost-effectiveness of exercise on prescription with ongoing support in general practice.
**Methods:** Prospective cost-effectiveness study undertaken as part of the 2-year Women's lifestyle study randomised controlled trial involving 1089 'less-active' women aged 40-74. The 'enhanced Green Prescription' intervention included written exercise prescription and brief advice from a primary care nurse, face-to-face follow-up at 6 months, and 9 months of telephone support. The primary outcome was incremental cost of moving one 'less-active' person into the 'active' category over 24 months. Direct costs of programme delivery were recorded. Other (indirect) costs covered in the analyses included participant costs of exercise, costs of primary and secondary healthcare utilisation, allied health therapies and time off work (lost productivity). Cost-effectiveness ratios were calculated with and without including indirect costs.
**Results:** Follow-up rates were 93% at 12 months and 89% at 24 months. Significant improvements in physical activity were

found at 12 and 24 months (p<0.01). The exercise programme cost was New Zealand dollars (NZ$) 93.68 (45.90) per participant. There was no significant difference in indirect costs over the course of the trial between the two groups (rate ratios: 0.99 (95% CI 0.81 to 1.2) at 12 months and 1.01 (95% CI 0.83 to 1.23) at 24 months, p=0.9). Cost-effectiveness ratios using programme costs were NZ$687 (331) per person made 'active' and sustained at 12 months and NZ$1407 (678) per person made 'active' and sustained at 24 months.
**Conclusion:** This nurse-delivered programme with ongoing support is very cost-effective and compares favourably with other primary care and community-based physical activity interventions internationally.
34*

**Gine-Garriga M, et al. Referral from primary care to a physical activity programme: establishing long-term adherence? A randomized controlled trial. Rationale and study design. *BMC Public Health* 2009;9: 31.**
**Background:** Declining physical activity is associated with a rising burden of global disease. There is little evidence about effective ways to increase adherence to physical activity. Therefore, interventions are needed that produce sustained increases in adherence to physical activity and are cost-effective. The purpose is to assess the effectiveness of a primary care physical activity intervention in increasing adherence to physical activity in the general population seen in primary care.
**Method and design:** Randomized controlled trial with systematic random sampling. A total of 424 subjects of both sexes will participate; all will be over the age of 18 with a low level of physical activity (according to the *International Physical Activity Questionnaire*, IPAQ), self-employed and from 9 Primary Healthcare Centres (PHC). They will volunteer to participate in a physical activity programme during 3 months (24 sessions; 2 sessions a week, 60 minutes per session). Participants from each PHC will be randomly allocated to an intervention (IG) and control group (CG). The following parameters will be assessed pre and post intervention in both groups: (1) health-related quality of life (SF-12), (2) physical activity stage of change (Prochaska's stages of change), (3) level of physical activity (IPAQ-short version), (4) change in perception of health (vignettes from the *Cooperative World Organization of National Colleges, Academies, and Academic Associations of Family Physicians*, COOP/WONCA), (5) level of social support for the physical activity practice (*Social Support for Physical Activity Scale*, SSPAS), and (6) control based on analysis (HDL, LDL and glycated haemoglobin). Participants' frequency of visits to the PHC will be registered over the six months before and after the programme. There will be a follow up in a face to face interview three, six and twelve months after the programme, with the reduced version of IPAQ, SF-12, SSPAS, and Prochaska's stages.
**Discussion:** The pilot study showed the effectiveness of an enhanced low-cost, evidence-based intervention in increased physical activity and improved social support. If successful in demonstrating long-term improvements, this randomised

controlled trial will be the first sustainable physical activity intervention based in primary care in our country to demonstrate long-term adherence to physical activity.
Link to full text: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2654559/pdf/1471-2458-9-31.pdf
132*

**Harrison R. *Evaluation of the Bolton exercise referral scheme*. Bolton: Bolton Primary Care Trust; 2004.**
A randomised controlled trial examined the extent that the Bolton Exercise Referral Scheme increased the percentage of people who were participating in moderate physical activity (PA) one year later. The effect on physical activity at 6 months was also determined. The outcome measure or activity target was defined as "participating in at least 90 minutes per week of moderate/vigorous activity" and assessed using a previously validated self-completion postal questionnaire.
Recruitment across all but one Bolton general practice started in March 2000 and by December 2001, a total of 545 participants had been randomised.
At 12 months, the % of people meeting the PA target was 5.4% greater in the intervention group compared to the control group. The actual percentages meeting this target were 25.8% in the intervention group and 20.4% in the control group. The differences between the intervention and control group were not statistically significant and could be chance observations.
At 6 months the % of people meeting the PA target was 9.0% greater in the intervention group compared with the control group. The actual percentages meeting this target were 22.6% in the intervention group and 13.6% in the control group. These differences were statistically significant and unlikely to be a chance observation.
Referral to the Exercise Scheme significantly increased satisfaction with information and reduced demand for further information. This did not influence PA at 6 and 12 months.
The effect of the Exercise Referral Scheme was similar among different sex, age and baseline CHD risk groups.
49*

**Isaacs A. *Exercise evaluation randomised trial (EXERT): a randomised trial comparing GP referral for leisure centre-based exercise, community-based walking and advice only*. HTA 11(10). Southampton: University of Southampton; 2007.**
**Objectives:** To evaluate and compare the effectiveness and cost-effectiveness of a leisure centre-based exercise programme, an instructor-led walking programme and advice-only in patients referred for exercise by their GPs.
**Design:** A single-centre, parallel-group, randomised controlled trial, consisting of three arms, with the primary comparison at 6 months.

**Setting:** Assessments were carried out at Copthall Leisure Centre in Barnet, an outer London borough, and exercise programmes conducted there and at three other leisure centres and a variety of locations suitable for supervised walking throughout the borough.
**Participants:** Participants were aged between 40 and 74 years, not currently physically active and with at least one cardiovascular risk factor.
Interventions: The 943 patients who agreed to participate in the trial were assessed in cohorts and randomised to one of the following three arms: a 10-week programme of supervised exercise classes, two to three times a week in a local leisure centre; a 10-week instructor-led walking programme, two to three times a week; an advice-only control group who received tailored advice and information on physical activity including information on local exercise facilities. After 6 months the control group were rerandomised to one of the other trial arms. Assessments took place before randomisation, at 10 weeks (in a random 50% subsample of participants), 6 months and 1 year in the leisure centre and walking arms. The control participants were similarly assessed up to 6 months and then reassessed at the same intervals as those initially randomised to the leisure centre and walking groups.
**Main outcome measures:** The primary outcome measures were changes in self-reported exercise behaviour, blood pressure, total cholesterol and lipid subfractions. Secondary outcomes included changes in anthropometry, cardiorespiratory fitness, flexibility, strength and power, self-reported lifestyle behaviour, general and psychological health status, quality of life and health service usage. The costs of providing and making use of the service were quantified for economic evaluation.
**Results:** There was a net increase in the proportion of participants achieving at least 150 minutes per week of at least moderate activity in the sport/leisure and walking categories in all three study groups: at 6 months, the net increases were 13.8% in the leisure centre group, 11.1% in the walking group and 7.5% in the advice-only group. There were significant reductions in systolic and diastolic blood pressure in all groups at each assessment point compared with baseline. There were also significant and sustained improvements in cardiorespiratory fitness and leg extensor power, and small reductions in total and lowdensity lipoprotein cholesterol in all groups, but there were no consistent differences between the groups for any parameter over time. All three groups showed improvement in anxiety and mental well-being scores 6 months after the beginning of the trial. Leisure centre and walking groups maintained this improvement at 1 year. There were no differences between groups. Costs to the participants amounted to £100 for the leisure centre scheme and £84 for the walking scheme, while provider costs were £186 and £92, respectively. Changes in overall Short Form 36 scores were small and advice only appeared the most cost-effective intervention.
**Conclusions:** The results of this trial suggest that referral for tailored advice, supported by written materials, including details of locally available facilities, supplemented by detailed assessments may be effective in increasing physical activity. The

inclusion of supervised exercise classes or walks as a formal component of the scheme may not be more effective than the provision of information about their availability. On cost-effectiveness grounds, assessment and advice alone from an exercise specialist may be appropriate to initiate action in the first instance. Subsidised schemes may be best concentrated on patients at higher absolute risk, or with specific conditions for which particular programmes may be beneficial. Walking appears to be as effective as leisure centre classes and is cheaper. Efforts should be directed towards maintenance of increased activity, with proven measures such as telephone support. Further research should include an updated meta-analysis of published exercise interventions using the standardised mean difference approach.
Link to full text: http://www.journalslibrary.nihr.ac.uk/__data/assets/pdf_file/0007/64654/FullReport-hta11100.pdf
56*

**Lamb SE, et al. Can lay-led walking programmes increase physical activity in middle aged adults? A randomised controlled trial. *Journal of Epidemiology and Community Health* 2002;56 (4): 246-252**.
**Study objective:** To compare health walks, a community based lay-led walking scheme versus advice only on physical activity and cardiovascular health status in middle aged adults.
**Design:** Randomised controlled trial with one year follow up. Physical activity was measured by questionnaire. Other measures included attitudes to exercise, body mass index, cholesterol, aerobic capacity, and blood pressure.
**Setting:** Primary care and community.
**Participants:** 260 men and women aged 40-70 years, taking less than 120 minutes of moderate intensity activity per week.
**Main results:** Seventy three per cent of people completed the trial. Of these, the proportion increasing their activity above 120 minutes of moderate intensity activity per week was 22.6% in the advice only and 35.7% in the health walks group at 12 months (between group difference =13% (95% CI 0.003% to 25.9%) p=0.05). Intention to treat analysis, using the last known value for missing cases, demonstrated smaller differences between the groups (between group difference =6% (95% CI -5% to 16.4%)) with the trend in favour of health walks. There were improvements in the total time spent and number of occasions of moderate intensity activity, and aerobic capacity, but no statistically significant differences between the groups. Other cardiovascular risk factors remained unchanged.
**Conclusions:** There were no significant between group differences in self reported physical activity at 12 month follow up when the analysis was by intention to treat. In people who completed the trial, health walks was more effective than giving advice only in increasing moderate intensity activity above 120 minutes per week
Link to full text: http://jech.bmj.com/content/56/4/246.long
64*

**Murphy S, et al. *The evaluation of the National Exercise Referral Scheme in Wales*. Cardiff: WAG; 2010.**
This report summarises the key results and recommendations from a series of papers which have assessed the effectiveness of the RCT of the National Exercise Referral Scheme (NERS) across 12 of the 13 local health boards in Wales. 2,160 inactive men and women aged 16+ with coronary heart disease (CHD) risk factors and / or mild to moderate depression, anxiety or stress were recruited to the RCT. Table 2 in the appendix shows the results of the regression analyses for each of the primary outcomes at 12 month follow-up. For all participants, those in the intervention group had higher levels of physical activity than those in the control, odds-ratio 1.19 (95% CI: 0.99, 1.43), but differences in activity were only statistically significant among those referred for CHD risk factors only (OR 1.29, 95% CI: 1.04, 1.60). There was no effect on physical activity among those referred wholly or partially for mental health reasons. For depression and anxiety outcomes, there were statistically significant differences among those referred wholly or partially for mental health reasons, but the effects among all participants were of lesser magnitude and marginal statistical significance (D: -0.71, 95% CI: -1.25, -0.17; A: -0.54, 95% CI: -1.12, 0.35) due to weaker effects among those referred for CHD reasons only. In sub-group analyses, there were statistically significantly greater effects on all outcomes among those who completed the 16-week programme compared to those who attended only partially or not at all. There were significant interactions with gender for both mental health outcomes, with the beneficial effect of the intervention only apparent among females.
Link to full text: http://gov.wales/docs/caecd/research/101104nationalexerciseschemeen.pdf
76*

**Murphy SM, et al. An evaluation of the effectiveness and cost effectiveness of the National Exercise Referral Scheme in Wales, UK: a randomised controlled trial of a public health policy initiative. [Erratum appears in J Epidemiol Community Health. 2012 Nov;66(11):1082]. *Journal of Epidemiology & Community Health* 2012;66(8): 745-753**.
**Background:** The Wales National Exercise Referral Scheme (NERS) is a 16-week programme including motivational interviewing, goal setting and relapse prevention
**Method:** A pragmatic randomised controlled trial with nested economic evaluation of 2160 inactive participants with coronary heart disease risk (CHD, 1559, 72%), mild to moderate depression, anxiety or stress (79, 4%) or both (522, 24%) randomised to receive (1) NERS or (2) normal care and brief written information. Outcome measures at 12 months included the 7-day physical activity recall, the hospital anxiety and depression scale.
**Results:** Ordinal regression identified increased physical activity among those randomised to NERS compared with those receiving normal care in all participants (OR 1.19, 95% CI 0.99 to 1.43), and among those referred for CHD only (OR 1.29,

95% CI 1.04 to 1.60). For those referred for mental health reason alone, or in combination with CHD, there were significantly lower levels of anxiety (-1.56, [corrected] 95% CI -2.75 to -0.38) and depression (-1.39, [corrected] 95% CI -2.60 to -0.18), but no effect on physical activity. The base-case incremental cost-effectiveness ratio was 12,111 per quality adjusted life year, falling to 9741 if participants were to contribute 2 per session.
**Conclusions:** NERS was effective in increasing physical activity among those referred for CHD risk only. Among mental health referrals, NERS did not influence physical activity but was associated with reduced anxiety and depression. Effects were dependent on adherence. NERS is likely to be cost effective with respect to prevailing payer thresholds.
78*

**Taylor AH, Fox KR. Effectiveness of a primary care exercise referral intervention for changing physical self-perceptions over 9 months. *Health Psychology.* 2005;24 (1): 11-21.**
This study investigated the effectiveness of a 10-week primary care exercise referral intervention on the physical self-perceptions of 40-70 year olds. Participants (N=142) were assessed, randomized to an exercise or control group, and reassessed at 16 and 37 weeks. The Physical Self-Perception Profile (PSPP; K. R. Fox, 1990), fitness, physical activity, body mass index, body fat (skinfolds), and hip and waist circumference were assessed. A multivariate analysis of variance revealed significant Group X Time interactions, with the exercise group showing greater physical self-worth, physical condition, and physical health at 16 and 37 weeks. Changes in all PSPP scales at baseline and 37 weeks were related to changes in anthropometric measures and adherence to the 10-week exercise program but not to changes in submaximal fitness parameters.
104*

**Cohort design:**

**Dinan S, et al. Is the promotion of physical activity in vulnerable older people feasible and effective in general practice? *British Journal of General Practice* 2006;56 (531): 791-793**.
There is convincing evidence about the benefits of exercise training in community dwelling frailer older people, but little evidence that this intervention can be delivered in general practice. In this prospective cohort study in 14 general practices in north London we assessed the feasibility and effectiveness of a tailored exercise referral programme for frail elderly patients

delivered within a variety of inner city primary care settings. One hundred and twenty-six women and 32 men aged 75 years and older, deemed borderline frail by their GPs, took part in a two-phase progressive exercise programme (Stage 1--primary care setting; Stage II--leisure/community centre setting) using the Timed Up And Go (TUG) test as the primary outcome measure. Baseline TUG measures confirmed that the participants were borderline frail and that GP selection was accurate. Of those referred by their GP or practice nurse 89% took up the exercise programme; 73% completed Stage I and 63% made the transition to the community Stage II programme. TUG improved in Stage I with a mean difference of 3.5 seconds (P<0.001). An individually tailored progressive exercise programme following GP referral, delivered in weekly group sessions by specialist exercise instructors within general practices, was effective in achieving participation in exercise sessions and in improving TUG values in a significant number of frailer older citizens
29*

**James DVB, et al. Factors associated with physical activity referral uptake and participation. *Journal of Sports Sciences* 2008;26(2): 217-224**.
The aim of this study was to examine participant and scheme characteristics in relation to access, uptake, and participation in a physical activity referral scheme (PARS) using a prospective population-based longitudinal design. Participants (n = 3762) were recruited over a 3-year period. Logistic regression analyses identified the factors associated with the outcomes of referral uptake, participation, and completion (>80% attendance). Participant's age, sex, referral reason, referring health professional, and type of leisure provider were the independent variables. Based on binary logistic regression analysis (n = 2631), only primary referral reason was associated with the PARS coordinator making contact with the participants. In addition to the influence of referral reason, females were also more likely (odds ratio 1.250, 95% confidence interval 1.003-1.559, P = 0.047) to agree to be assigned to a leisure provider. Referral reason and referring health professional were associated with taking up a referral opportunity. Older participants (1.016, 1.010-1.023, P < 0.001) and males were more likely to complete the referral. In conclusion, the PARS format may be less appropriate for those more constrained by time (women, young adults) and those with certain referral reasons (overweight/obesity, mental health conditions). More appropriate targeting at the point of referral could improve participation rates by revealing or addressing barriers that might later result in dropout.
57*

**Non-randomised study designs:**

**Birnie K, et al. An evaluation of a multi-component adult weight management on referral intervention in a community setting. *BMC Research Notes* 2016;9: 104.**
**Background:** National Institute for Health and Care Excellence (NICE) guidance on adult weight management recommends interventions are multi-component. We aimed to assess the implementation and health benefits of a primary care referral to an adult multi-component weight management intervention in a community setting. The intervention was offered through Primary care in National Health Service (NHS) South Gloucestershire, UK, from Oct 2008 to Nov 2010, in partnership with statutory, community and commercial providers. The scheme offered 12 weeks' community based concurrent support of dietary (Weight Watchers, WW), physical activity (Exercise on Prescription, EOP) and behavioural change (motivational interviewing) components to obese adults. Funding was available for 600 places
**Results:** Five hundred and fifty nine participants engaged with the intervention, mean age 48 years, 88% female. Mean weight loss for all engagers was 3.7 kg (95 % confidence interval 3.4, 4.1). Participants completing the intervention achieved the largest weight reduction (mean loss 5.9 kg; 5.3, 6.6). Achievement of 5% weight loss was higher in completers (58%; 50, 65) compared to non-completers (19%; 12, 26) and people who only participated in one commercial component of the intervention (either WW or EOP; 19%; 13, 24)
**Conclusion:** A multi-component weight management programme may be beneficial for weight loss, but a randomized controlled trial is needed to establish effectiveness and to evaluate cost.
Link to full text: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4756398/pdf/13104_2016_Article_1901.pdf
10*

**Bozack A, et al. Implementation and outcomes of the New York State YMCA diabetes prevention program: a multisite community-based translation, 2010-2012. *Preventing Chronic Disease* 2014;11: E115.**
**Introduction:** Weight loss and physical activity achieved through the Diabetes Prevention Program (DPP) have been shown to reduce type 2 diabetes risk among individuals with prediabetes. The New York State Young Men's Christian Association (YMCA) delivered the 16-week evidence-based model at 14 YMCAs. A mixed methods process and outcomes evaluation was conducted
**Methods:** Most participants were referred by clinicians and were encouraged to achieve 5% to 7% weight loss. Participants were weighed weekly; additional data were gathered from participant surveys and focus groups and staff surveys and interviews.
**Results:** Participants (N = 254) lost a mean of 9 pounds (P < .001), or 4.2% of body weight, by program completion; 40%

achieved 5% or more weight loss and 25% achieved 7% or more weight loss. Ten months after baseline, 61% of participants reported 5% or more weight loss and 48% reported 7% or more weight loss. In multivariate models, weight loss was negatively associated with black race (16 weeks: adjusted odds ratio [AOR], 0.190, P = .002; 10 months: AOR, 0.244, P = .005) and positively associated with attendance (16 weeks: AOR, 18.699, P < .001; 10 months: AOR, 2.808, P = .024). Participants reported improvements in health and lifestyle changes after program completion. Factors contributing to program success included coaches who motivated participants, the group setting, curriculum, and program duration. However, sociodemographic diversity was limited
**Conclusion:** Outcomes demonstrate the potential for effectively implementing the DPP in community-based settings. Findings also suggest the need for replications among a broader population.
12*

**Dugdill L, et al. Exercise referral: the public health panacea for physical activity promotion? A critical perspective of exercise referral schemes; their development and evaluation. *Ergonomics* 2005;48(11-14): 1390-1410.**
This review critically explores the development, impact and evaluation of exercise referral schemes (ERS) in the UK. A rapid expansion in the use of such ERSs has been recorded throughout leisure and primary care settings, but the evidence underpinning their implementation has been sparse and predominantly limited to randomized control trial (RCT) research design. Consequently, understanding of exercise referral as a 'real world' intervention has been limited. Considering the increasing importance being placed on evidence-based practice and clinical effectiveness, it is no longer sufficient for service providers of exercise referral to ignore the need to evaluate schemes. The guidelines on evaluation provided by the National Quality Assurance Framework for Exercise Referral are limited; hence practitioners are often unsure of the best measures to use when assessing effectiveness. Predominantly, exercise professionals focus on the collection of physiological data but tend to ignore relevant psychological and environmental parameters. Also, few UK studies have followed participants up in the long term, to see if physical activity behaviour is sustained over time. Here, evidence from two on-going, large-scale (n = 1600/annum) evaluation studies of exercise referral schemes, based in urban localities in the northwest of England, are described. A participatory action research framework for evaluation was utilized and incorporated multi-method research approaches for the assessment of both ERS participants and health professionals involved in intervention delivery. This framework is an appropriate methodology for the evaluation and development of complex interventions, and here incorporates case study, focus groups, interviews and survey questionnaires. Included was a 12-month tracking study of a cohort of exercise referral participants (n = 342), which measured leisure-time physical activity levels (Godin leisure time score), at baseline (entry to exercise referral) and at 3 monthly intervals thereafter. Adherence to the ERS was approximately 35-45%,

with the older participants more likely to complete. Physiological changes during the ERS, although statistically significant, were not of a magnitude to convey any real health benefit to an individual's health status. Although small in scale, physiological changes were all in a positive direction (e.g. reduction in blood pressure) and, if maintained over time, could bring about population-level benefits in health. Participants referred from cardiac and practice nurses had higher levels of adherence than participants referred by general practitioners. Scheme B showed that the participants who adhered (n = 103) until the end of the ERS (12 weeks) were able to sustain a small increase in physical activity at the end of 12 months (increase of 21 min moderate activity/week compared with baseline). In conclusion, this research shows that the process of exercise referral benefits certain segments of the population, but not necessarily all.
32*

**Gademan MG, et al. The effect of exercise on prescription on physical activity and wellbeing in a multi-ethnic female population: A controlled trial. *BMC Public Health* 2012;12: 758**.
**Background:** In Western countries, individuals from multi-ethnic disadvantaged populations are less physically active than the Western population as a whole. This lack of physical activity (PA) may be one of the factors explaining disparities in health. Exercise on Prescription" (EoP), is an exercise program to which persons are referred by primary care. It has been developed to suit the needs of physically inactive women from diverse ethnic backgrounds living in deprived neighborhoods in the Netherlands. The effectiveness of this program has however, not yet been proven.
**Methods:** A total of 514 women from diverse ethnic backgrounds were included in this study (192 EoP, 322 control group). Women in the EoP group participated in 18 sessions of supervised PA. The control group received care as usual. At baseline, 6 and 12 months the women attended an interview and a physical examination. Outcome measures were PA, BMI, weight circumference, fat percentage, oxygen uptake, mental well-being, subjective health and use of care. Results: Of the participants 59% had a low educational level and 90% of the women were overweight or obese. Compliance was high, only 14% dropped out during the course of the program. Total PA did not change, PA during leisure time increased at 6 and at 12 months and PA during household activities increased at 12 months (P EoP vs. Control < 0.05). EoP had no significant effect on the other outcome variables. **Conclusions:** EoP was successful in recruiting its target population and compliance was high. The effect of EoP on PA, health and mental well-being was limited. In this format EoP does not seem to be effective for increasing PA and the health status of non-Western migrant women.
Link to full text: http://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-12-758
43*

**Hendry M, et al. *Survey focussing on exercise referral schemes (SurFERS)*. Cardiff: All Wales Alliance for Research and Development in Health and Social Care; 2006.**
The aim of this study was to survey existing exercise referral schemes in Wales. Its objectives were to ascertain: what is current practice in relation to exercise referral schemes? What is currently available? Who is undertaking these schemes? And are any results of audit or other evaluation available? Postal questionnaires were sent to 22 unitary authorities in Wales. 21 local authority schemes and two other schemes returned completed questionnaires. Results from the questionnaires showed that there was a large variation in the proportion of clients who had completed the first course of exercise during the previous year, ranging from 17% to 100%. Continuation rates were reported for 10 schemes and these also varied widely. Formal evaluation was reported to be taking place in 14 schemes. Evaluations were mainly client centred and based on questionnaires, interviews, evaluation forms or review forms. Only one scheme was reported to be undergoing external evaluation by an academic institution. The main performance indicators were attendance (13 schemes), referral rates (7), retention in the scheme and continuing to exercise after completion (7) and various health measures (6). Where performance indicators were used, it was reported that systems for monitoring were in place.
52*

**Moore GF, et al. Mixed-method process evaluation of the Welsh National Exercise Referral Scheme. *Health Education* 2013;113(6): 476-501**.
**Purpose:** Primary-care referral to community-based exercise specialists (exercise referral) is common in the UK despite limited evidence of effectiveness. A recent pragmatic randomised trial of the Welsh National Exercise Referral Scheme (NERS), demonstrated promising impacts upon physical activity and mental health. This paper presents a mixed-method process evaluation exploring how outcomes were achieved.
**Design/methodology/approach:** Structured observation, implementer interviews and routine data assessed the extent to which NERS was implemented as intended. Baseline trial data were combined with routine monitoring data for the purposes of profiling uptake and adherence. Semi-structured patient interviews explored processes of change and the emergence of social patterning in responses to the scheme.
**Findings:** NERS offered patients a programme of supervised, group-based discounted exercise. However, motivational interviewing, goal-setting and patient follow-up protocols were delivered poorly. The high degree of professional support was perceived as helping patients to build confidence and assimilate into exercise environments. Patient-only classes provided social contacts, a supportive context and realistic models. Patterning in uptake emerged from access issues, with uptake lower

among non-car owners. Adherence was poorer among mental health patients, younger patients and those who were least active prior to referral to NERS.
**Originality/value:** In practice, although the NERS RCT demonstrated positive impacts on physical activity and mental health, process evaluation data indicate that the intervention was not entirely delivered as intended. Mixed-method process evaluation served crucial functions in understanding implementation and functioning, offering insights into the roles of professional support and exercise classes in promoting activity and mental health, and the emergence of social patterning in responses to an ERS.
72*

**Ward M, et al. Heartlinks: a real world approach to effective Exercise Referral: reducing coronary heart disease risk and improving health through a negotiated exercise programme. *International Journal of Health Promotion and Education* 2010;48(1): 20-27**.
**Objective:** To identify changes in health, coronary heart disease (CHD) risk and levels of physical activity amongst patients referred to a tailored exercise referral programme.
**Design:** Sedentary adult patients identified as 'at risk' of coronary heart disease, were referred from a wide range of health professionals into a 12 month, individually tailored exercise programme closely supported by a sports scientist. A 'before and after' evaluation methodology was employed to measure health, CHD risk, activity levels and physiology.
**Results:** 46 per cent of those starting Heartlinks were still in the programme after 12 months by which time they had increased their activity levels by 547 per cent, their perceived physical health scores measured using the SF36 General Health measure improved by 4.21 ($p < 0.001$), their mean mental scores by 3.11 ($p < 0.005$) and their absolute risk from Coronary Heart Disease (CHD) reduced by 8% with a relative risk reduction of 20% measured using the CALMheart risk assessment tool.
**Conclusion:** The Heartlinks exercise referral model significantly increased physical activity levels, reduced modifiable coronary heart disease risk and improved perceptions of both physical and mental health over a 12 month period.
111*

**Evaluations of existing services / pilot projects:**

**Flannery O, et al. *Exercise on Prescription Evaluation Report for South Gloucestershire*. Gloucester: University of Gloucestershire; 2014.**
The aim of this report is to evaluate the effectiveness of the South Gloucestershire Exercise on Prescription (EOP) Scheme. Overall, there were 2,505 participants in the programme aged 18-94 years old (M = 53.02, SD = 15.40) with a modal age of 66. Most participants were female (60.6%) (n = 1,517) versus 39.4% of males (n = 987), and the majority were White British (95%). Frequent reasons for programme referral were a BMI >30 and depression. The evaluation found that: there was a significant increase in the number of reported 30 minute exercise sessions per week between the start and the end of the programme. There was a significant decrease in reported systolic blood pressure and waist measurement between the start and the end of the programme. The programme did not appear to make a difference to the service users' weight, BMI, hip measurement, or diastolic blood pressure. There was a significant increase in reported well-being WEMWBS scores between the start and the end of the programme.
136*

**Gauge NI. *Healthwise Physical Activity Referral Scheme. SROI Pilot exercise.* Belfast: Gauge NI; 2014.**
This report evaluates the SROI from the Healthwise Physical Activity Referral Scheme pilot exercise in Belfast, NI. Using the internationally recognised set of SROI principles, Gauge completed a small-scale SROI review of the scheme in one location, utilising comprehensive quantitative data from an agreed sample group as well as gathering qualitative feedback on a range of softer outcomes. This provided information on how the users have benefited and how their lives have been impacted through participation in Healthwise. The exercise drew on client data which had been collected from the 36 participants who started the project, with 26 completing the full 12 weeks of the Healthwise programme. Core health and medical data collected included height, weight, BMI, heart rate, blood pressure, feel good index, referral rationale and programme activities. Additional surveys were completed by 19 users indicating the change experienced by clients in a range of issues on a scale of 1 to 10. Moreover, a focus group with a pool of five participants added to the depth of data and contributed to the 'theory of change' by adding the personal journeys experienced by the individuals as a result of the project. The evaluation has identified positive economic and social impact across five key issues; physical health, mental health, social engagement, skills of trainers and awareness of physical activity benefits and services. The use of the SROI methodology has calculated the economic and social aspects have delivered a return of approximately £7 for every £1 invested in the Healthwise Physical Activity Referral Programme during the period of April 2012 –March 2013.

*original reference number from include/exclude table

Link to full text: http://www.makinglifebettertogether.com/wp-content/uploads/2016/03/Healthwise-Social-Return-on-Investment-Report-May-2014.pdf
44*

**Henderson H, Mullineaux D. *Lincolnshire Exercise Referral Evaluation Research.* Lincoln: University of Lincoln; 2013.**
The evaluation research examined the data for patients who were referred by health professionals for supervised exercise in Lincolnshire over a 12 month period. The data analysed spanned a period of 12 months and included patients in the database who started a 12-week ER programme between September through to November 2013, and attended the first (week 1), second (week 12) and none or more of the following two visits (6 and 12 months). There were 935 eligible patients with 776 (82.9%) patients completing week 1 of the NZPAQ (61.8% female and 38.2% male) and 780 (83.4%) completing week 1 of the EQ-5D-3L (62% female and 38% male). The number of completions varied across each question for both surveys, and all responses that were provided have been analysed. The research found that: NZPAQ mean scores for days active, but not activity duration, were generally significantly improved at 12 weeks, 6 months and 12 months in comparison to week 1 for both males and females. EQ-5D-3L also showed improved scores for most questions at week 12 for both males and females, but fewer improved scores at 6 months and 12 months. Females showed greater improvements than males. NZPAQ mean scores for those patients referred for obesity significantly increased from week 1 to 12 weeks and 6 months, but fewer improvements to 12 months (only question 1 and 8). Patients referred for other reasons (i.e. non-obesity) showed greater improvements at 12 months, particularly in the number of days active. EQ-5D-3L mean scores for those patients referred for obesity showed some improvement in health status (question 6), but most other variables showed no change. In contrast, patients referred for other reasons showed greater improvements that lasted up to 12 months, and included improvements from 12 weeks to 6 and 12 months particularly for health status. Anxiety (EQ-5d-3L question 5), and no other EQ-5d-3L or NZPAQ questions, was the only variable to significantly contribute to predicting the likelihood of BMI changing by >.33kg/m2 (approximately the median BMI change from week 1 to week 12). Those with low levels of anxiety had the highest likelihood of improving their BMI. Deprivation was poorly distinguished by the NZPAQ, whereas the EQ-5D-3L had high consistency in distinguishing between high and low deprivation scores. For all 6 questions at all time points the high deprivation score (i.e. least deprived) revealed better EQ-5D-3L scores than the low deprivation score.
138*

## 4. Referral to a commercial weight loss programme:

**Randomised controlled trial design:**

**Fuller NR, et al. A within-trial cost-effectiveness analysis of primary care referral to a commercial provider for weight loss treatment, relative to standard care--an international randomised controlled trial. *International Journal of Obesity* 2013;37(6): 828-834.**
**Background:** Due to the high prevalence of overweight and obesity there is a need to identify cost-effective approaches for weight loss in primary care and community settings.
**Objective:** We evaluated the cost effectiveness of two weight loss programmes of 1-year duration, either standard care (SC) as defined by national guidelines, or a commercial provider (Weight Watchers) (CP).
**Design:** This analysis was based on a randomised controlled trial of 772 adults (87% female; age 47.4+/-12.9 years; body mass index 31.4+/-2.6kgm (-2)) recruited by health professionals in primary care in Australia, United Kingdom and Germany. Both a health sector and societal perspective were adopted to calculate the cost per kilogram of weight loss and the ICER, expressed as the cost per quality adjusted life year (QALY).
**Results:** The cost per kilogram of weight loss was USD122, 90 and 180 for the CP in Australia, the United Kingdom and Germany, respectively. For SC the cost was USD138, 151 and 133, respectively. From a health-sector perspective, the ICER for the CP relative to SC was USD18266, 12100 and 40933 for Australia, the United Kingdom and Germany, respectively. Corresponding societal ICER figures were USD31,663, 24,996 and 51,571
**Conclusion:** The CP was a cost-effective approach from a health funder and societal perspective. Despite participants in the CP group attending two to three times more meetings than the SC group, the CP was still cost effective even including these added patient travel costs. This study indicates that it is cost effective for general practitioners (GPs) to refer overweight and obese patients to a CP, which may be better value than expending public funds on GP visits to manage this problem.
42*

**Jebb SA, et al. Primary care referral to a commercial provider for weight loss treatment versus standard care: a randomised controlled trial. *Lancet* 2011;378 North American Edition (9801): 1485-1492**.
**Background:** The increasing prevalence of overweight and obesity needs effective approaches for weight loss in primary care

and community settings. We compared weight loss with standard treatment in primary care with that achieved after referral by the primary care team to a commercial provider in the community.
**Methods:** In this parallel group, non-blinded, randomised controlled trial, 772 overweight and obese adults were recruited by primary care practices in Australia, Germany, and the UK. Participants were randomly assigned with a computer-generated simple randomisation sequence to receive either 12 months of standard care as defined by national treatment guidelines, or 12 months of free membership to a commercial programme (Weight Watchers), and followed up for 12 months. The primary outcome was weight change over 12 months. Analysis was by intention to treat (last observation carried forward [LOCF] and baseline observation carried forward [BOCF]) and in the population who completed the 12-month assessment. This trial is registered, number ISRCTN85485463.
**Findings:** 377 participants were assigned to the commercial programme, of whom 230 (61%) completed the 12-month assessment; and 395 were assigned to standard care, of whom 214 (54%) completed the 12-month assessment. In all analyses, participants in the commercial programme group lost twice as much weight as did those in the standard care group. Mean weight change at 12 months was -5.06 kg (SE 0.31) for those in the commercial programme versus -2.25 kg (0.21) for those receiving standard care (adjusted difference -2.77 kg, 95% CI -3.50 to -2.03) with LOCF; -4.06 kg (0.31) versus -1.77 kg (0.19; adjusted difference -2.29 kg, -2.99 to -1.58) with BOCF; and -6.65 kg (0.43) versus -3.26 kg (0.33; adjusted difference -3.16 kg, -4.23 to -2.11) for those who completed the 12-month assessment. Participants reported no adverse events related to trial participation.
**Interpretation:** Referral by a primary health-care professional to a commercial weight loss programme that provides regular weighing, advice about diet and physical activity, motivation, and group support can offer a clinically useful early intervention for weight management in overweight and obese people that can be delivered at large scale.
58*

**Non-randomised study designs:**

**Hunt P, Poulter J. An evaluation of Weight Watchers referrals. *Practice Nursing* 2007;18(5): 236-241**.
This article evaluates the first year of a weight watchers referral scheme from 2005 which enabled primary care trusts (PCTs) to buy subsidized courses of weight watchers meetings for their patients. The aims of the evaluation were to: assess patient's attendance and weight loss outcomes following the first year of the referral schemes operation. Examine views of the scheme from patients and referring professionals, and inform further development of the scheme. Quantitative and qualitative

research methods were used to evaluate both outcome and process elements of the scheme. Between April 2005 and April 2006 198 patients enrolled in the referral scheme. The average no. of weeks attended was 8.8 and over half the group (58%) completed the full 12-week course. Weight gain was halted in 92% of patients and the mean weight loss was 4.3kg. The average % weight loss from initial weight was 4.2% with 39% (n=77) losing 5% or more of their start weight by the end of the 12-week period. Regular attendee's (i.e. those who attended the full 12-week course) had significantly better weight loss (5.7kg) than less regular attendee's (i.e. those who did not attend the full 12-week course) (2.6kg). Of those attending regularly, 58% (n=61) lost 5% or more of their start weight versus only 16% (n=15) of those attending less regularly.
54*

**Lavin JH, et al. Feasibility and benefits of implementing a Slimming on Referral service in primary care using a commercial weight management partner. *Public Health* 2006;120(9): 872-881.**
**Objectives:** To assess participation in a costed Slimming on Referral service and identify factors associated with success.
**Study design:** Simple intervention offering participation in a new service to 100 eligible patients. The setting was two Derby general practices, one inner city and one suburban.
**Participants:** One hundred and seven patients (mean age 50 years) attending general practice for non-obesity reasons. Inclusion criteria: BMI > or = 30, age > or = 18 years, not pregnant, no recent commercial weight management group membership, willingness to attempt weight loss.
**Methods:** Patients were offered free attendance at a local Slimming World group for 12 consecutive weeks. Body weight and height were measured at baseline, and questionnaires established perceived health, motivation to lose weight, employment, concerns, responsibilities and well-being. Weight was measured at each group visit. The main outcome measures were: (1) changes in body weight at 12 and 24 weeks, (2) social and demographic factors associated with barriers to enrolment, continued attendance and successful weight loss.
**Results:** Ninety-one (85%) patients attended a group, with 62 completing 12 weeks. Average weight loss in participants was 5.4 kg (6.4% baseline weight). Forty-seven then chose to self-fund, with 34 (37% original group) completing a further 12 weeks. Average weight loss over the total 24 weeks was 11.1 kg (11.3% baseline weight). Regular attendance was affected by income, financial concerns (independent of actual income), age, perceived importance of weight loss and initial weight loss success. Well-being of patients significantly improved between baseline and both 12 and 24 weeks.
**Conclusions:** Collaboration with an appropriate commercial weight management organization offers a feasible weight management option that is either similar to, or better than, other options in terms of attrition, efficacy and cost.
65*

## 5. Referral to a welfare advice service:

**Evaluations of existing services / pilot projects:**

**Krska J, et al. Evaluation of welfare advice in primary care: effect on practice workload and prescribing for mental health. *Primary Health Care Research & Development* 2013;14(3): 307-314**.
**Aims:** To determine Citizen's Advice Bureaux (CAB) and general practice staff perceptions on the impact of a CAB Health Outreach (CABHO) service on staff workload. To quantify the frequency of mental health issues among patients referred to the CABHO service. To measure any impact of the CABHO service on appointments, referrals and prescribing for mental health.
**Background:** GPs and practice managers perceive that welfare rights services, provided by CAB, reduce practice staff workload, but this has not been quantified.
**Methods:** Interviews with practice managers and GPs hosting and CAB staff providing an advisory service in nine general practices. Comparison of frequency of GP and nurse appointments, mental health referrals and prescriptions for hypnotics/anxiolytics and antidepressants issued before and after referral to the CABHO service, obtained from medical records of referred patients.
**Findings:** Most GPs and CAB staff perceived the service reduced practice staff workload, although practice managers were less certain. CAB staff believed that many patients referred to them had mental health issues. Data were obtained for 148/250 referrals of whom 46% may have had a mental health issue. There were statistically significant reductions in the number of GP appointments and prescriptions for hypnotics/anxiolytics during the six months after referral to CABHO compared with six months before. There were also non-significant reductions in nurse appointments and prescriptions for antidepressants, but no change in appointments or referrals for mental health problems. The quantitative findings therefore confirmed perceptions among both CAB and practice staff of reduced workload and in addition suggest that prescribing may be reduced, although further larger-scale studies are required to confirm this.
63*