



This is a ‘platform’ evidence summary commissioned by the National Academy for Social Prescribing (NASP) from their Academic Partnership (AP). The AP has a research track record in the review question or topic and were able to provide an expert commentary on the evidence base, together with an indication of the limitations of that evidence base. Their commentary represents the ‘platform’, from which they undertook further literature searches. They worked with an information specialist to design and conduct database and grey literature searches relevant to the review question or topic (see appendix 1 & 2). They screened references located from these searches against inclusion/exclusion criteria. Included studies were added to the commentary provided by their topic expert(s) to update, broaden, or otherwise add to the existing ‘platform’.

The economic impact of social prescribing

Context

This evidence summary is one of a suite commissioned by the National Academy for Social Prescribing (NASP) from their Academic Partners in 2021 (<https://socialprescribingacademy.org.uk/academic-partners-collaborative/>). The topics included in this suite were identified through a robust prioritisation process with individuals representing the breadth of the social prescribing landscape. The summaries were produced by researchers from the NASP Academic Partnership; specific teams are listed on each document.

Four of these topics had significant work conducted previously by members of our group, and so we report that work then build out using new database searches and broader grey searches; to produce synthesised conclusions about what is known (we term these ‘platform’ reviews, see above). The remaining summaries are ‘fresh’ reviews of the evidence base as it stands.

The summaries are intended for a broad readership but have a policy and practice focus; bringing together what is known on specific areas relating to social prescribing and summarising the findings, limitations, and gaps in that field. Each summary contains a detailed bibliography, and we would encourage readers to follow these links for further, more detailed, reading on each topic.

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Question description

What does the current evidence base tell us about the economic impact of social prescribing pathways, including value for money, cost-effectiveness and return on investment?

Methodological approach, plus additions for this summary

Platform element

As with our other platform reviews, the current evidence was summarised by the members of the NASP Academic Partnership most aligned with this topic. This was a summary of their teams' work on the area and was brought together into synthesised paragraphs along with a summary of the limitations, key gaps, and areas to strengthen as detailed below.

Additional evidence element

Given the team experience in the above, we conducted targeted searches in Scopus and Web of Science, which yielded 107 results to screen, and a focused Google search which yielded an additional 16 items (see Appendix 1). No date limits were applied. We also re-screened the evaluation reports which were collated for the summary that looked at 'Who is, and isn't, being referred to social prescribing?'. After screening 5 sources were identified for inclusion in the additional evidence element.

These two components, 'what was known' in the platform and 'what is added' in the additional evidence, are brought together to assess what we can say overall in the Conclusions section at the end of this document.

Summary of evidence by experts ('Platform')

Background

Despite policy interest and need, we frequently find that no economic evaluations are available for social prescribing initiatives. There are only a few, often quite small-scale, rarely seen and deeply hidden public health economic analyses. Not a lot of work is undertaken on assessing cost-effectiveness and our understanding of what is meant by cost effectiveness is skewed by discussions of 'value for money' and 'social value'. Not a lot of economic evaluation is undertaken and the (public)

health economist is often an after-thought in any multi-discipline research teams (Clarke et al 2020).

A recent systematic search for papers on social prescribing involving three of the team members (Polley, Bertotti, Kimberlee et al, 2017) was conducted using online databases. It included other social prescribing evaluations and assimilated reports received from key opinion leaders. Of the ninety-four project reports identified from the systematic search, fourteen papers met the specified criteria. Of these, only one was a randomised controlled trial (RCT) (Grant et al, 2000) and two included a matched controlled group (Bertotti et al, 2015; Maughan et al, 2015). Eight of the studies calculated value for money assessments such as cost benefit analysis (CBA) (Burgess, 2014; Windle et al., 2016). None of the studies used the traditional cost-effectiveness (CE) or full cost-utility analysis (CUA). **Estimates varied widely from an annual Return on Investment (ROI) of 0.11 (in the first year of operations) to 0.43 (Kimberlee, 2016b). The RCT reported higher cost of care per patient in the intervention group than the control, though no value for money assessments were calculated (Grant et al., 2000).** However, it has been noted that if this RCT study had taken into account the long-term savings made beyond a year and compared the costs to what would have happened if the patients had been referred to a specialist and/or secondary care; then the savings to the health service have been calculated to have been considerably greater (Thornett, 2000).

The same review reported that four studies carried out a broader Social Return on Investment (SROI) calculations. SROI puts an estimated monetary value on the sum of benefits accruing to all stakeholders, not just the NHS. Studies varied in the combination of stakeholders and benefits selected for inclusion in SROI calculations. Patients, Local Authorities and the Department of Work and Pensions were commonly cited stakeholders. Improved mental wellbeing outcomes and higher rates of employment were examples of positive impacts considered in the SROIs; but these values are often excluded from simpler ROI analysis. **The mean SROI (Weld et al., 2015) was £2.3 per £1 invested in the first year (Kimberlee, 2016a).**

Multiple, ongoing, evaluation work on the Rotherham Social Prescribing Service (RSPS) (Dayson et al, various since 2014) has consistently tracked a cohort of patients through secondary care data (Unplanned hospital stays, Accident & Emergency (A&E) presentations) with a view to understanding the economic benefits of social prescribing for the health system. Despite comparatively rich and deep data, the **results remain inconclusive**. In the most recent report covering referrals made between 2016-18 (Dayson et al, 2020) it demonstrates that majority of RSPS patients were not 'intensive' or 'high cost' users of secondary care. More than two-thirds of patients had either zero or one non-elective inpatient spell in the 12 months prior to their RSPS referral and more than three-quarters had either zero or one accident and emergency attendances during the same period. **The data showed that that there was a small overall increase in the number and**

cost of RSPS patients' inpatient spells and accident and emergency attendances in the 12 months following referral.

However, this headline finding **masked a much more complex picture**. When the data were explored in more detail the likelihood of an RSPS patient seeing a reduction in their secondary care utilisation in the 12 months following their referral was predominantly affected by how many times they accessed secondary care in the previous 12 months, with the highest users seeing the biggest reductions; and age, with younger patients more likely to see a reduction than older patients. It was not possible to say whether these reductions were wholly or partially caused by the RSPS referral and subsequent support and intervention. This is an issue of attribution that is core to many economic analyses. Further comparative analysis is required to understand this trend in the context of the wider Rotherham population and how patterns of secondary care use vary by age, health condition and other contextual factors.

The Evaluation of the Doncaster Social Prescribing Service attempted to measure the Quality Adjusted Life Year (QALY) gain associated with a social prescribing referral (Dayson et al, 2016) drawing on other Better Care Fund interventions as an imperfect comparator. The evaluation estimated that **social prescribing contributed to an additional 91.7 QALYs: a cost per QALY of £1,963**. If the estimated total QALY gained across the whole Programme is converted into a monetary value using the NHS threshold of £20,000, then the value of the benefits gained amounts to £1,834,000. **This means that for every £1 of the £180,000 funding spent supporting vulnerable people, the Social Prescribing Service produced more than £10 of benefits in terms of better health**. The evaluation concluded that, overall, the Social Prescribing Service appears to be a very cost-effective intervention when the cost per QALY of less than £2,000 is compared to the NICE threshold of £20,000. However, the findings were caveated as the data only provide an indication of short-term benefits. The changes in health-related quality of life were measured after between 3 and 6 months following first engagement with the Service and as such, we do not know the extent to which these changes might have been sustained over a longer period (i.e., 12 months or longer) or how much of the change is due to a social prescribing 'effect'.

Collaborative colleague Marcello Bertotti's work led him to conclude that they have **consistently found a positive SROI from our economic evaluations of social prescribing** in Redbridge (Bertotti et al., 2020a), Waltham Forest (Bertotti et al., 2017), Hackney (Bertotti et al., 2020b), and Sheffield (Bertotti et al., 2020c), the latter targeting young people. The economic evaluation of social prescribing in Redbridge showed a positive, above average return (£1:£2.30) SROI (£1:£2.86) for the first year. The financial value of outcomes from mental well-being is particularly high £137,013, whilst employment recorded a negative value. In terms of the healthcare care use cost analysis, the team found a statistically significant reductions in General Practitioner (GP) consultation rates with an associated cost saving of £2,489; seemingly small. The SROI for Waltham Forest (phone service only) ranged between £1.09 and £1.92 which is below average from review of

economic evidence (Polley et al., 2017). The SROI for Hackney social prescribing scheme was £1: £3.51. Estimates for the overall population could be as high as £1:£8.56. Sheffield social prescribing for children and young people recorded an SROI of (£1:5.04) which is above average. However, the combined savings from GP consultations, A&E attendance and non-elective hospital admissions was limited to a total of £4,668 over the six months period of analysis. In relation to this, it is important to note that the all sample sizes are substantially lower than the overall population of social prescribing service users. This means that the total SROI could be substantially higher, including savings from GP consultations and A&E attendance.

Overall, SROI from these studies was higher than the average (Polley, Bertotti, Kimberlee et al., 2017) economic evidence appraisal. The positive evidence of SROI impact is also reinforced by the fact that slightly different methodologies were used to test the impact of social prescribing with consistently positive returns.

Polley used a retrospective case-controlled approach to case match and create a control group for the social prescribing service in Shropshire (Polley et al 2019). **A statistically significant reduction was seen in visits to the GP (reduced by 40%, p=0.00). There was no statistically significant reduction in visits to the GP in the control group. It is therefore highly likely that the social prescribing service is having a significant reduction on the number of GP consultations, for participants who were referred due to their risk of cardiovascular disease.** The team did not calculate the economic impact of this, but it does show the viability in some cases of retrospective case matching and the potential for further economic analysis.

Social prescribing and economic analyses, limitations

Public health decision makers, faced with limited resources, must routinely make decisions about how to prioritize public health problems and related interventions and choose among several alternatives. In making such choices, decision makers should benefit by knowing the financial resources required to implement each effective intervention and how money invested in an intervention compares to outcomes achieved. Economic evaluations provide this information by traditionally comparing the costs and consequences of public health interventions with existing interventions. The National Institute of Health and Care Excellence (NICE) adopts this approach and usually require the utilisation of the 'gold standard' RCT approach to provide sufficient evidence of effectiveness and importantly cost effectiveness to warrant the recommendation that the 'intervention' is cost effective. NICE assumes that the objective of public health interventions is to maximise QALY. Cost per QALY calculations recommend using a £20,000- 30,000 threshold to indicate cost-effectiveness. Very few researchers exploring social prescribing efficacy have adopted this approach. In fact, many argue that social prescribing initiatives are not suitable for RCT approaches to assess cost-effectiveness (Kimberlee, 2015, Friedli 2007). Largely because for health

economists to measure a full range of outcome measures economic analyses need to go beyond QALY; to take account of all stakeholders and not just the NHS or health system (Kimberlee, 2016).

Ironically, and seldom appreciated is that the RCT 'gold standard' using QALY outcome measures generally generate 'Incremental Cost-Effective Ratios' (ICERS) which mean that the intervention is usually more costly than the usual practice. Something frequently unrecognised by many health professionals, and some commissioners. Thus, specific economic measures and methods raise concern about appropriate interpretations making the challenge for making the economic case for social prescribing that much harder.

Traditionally cost analysis considers the costs incurred to develop and implement an intervention, including direct costs, indirect costs, and intangible costs. Direct costs represent the value of resources used specifically for the intervention. These costs are often characterized as medical or non-medical. Direct medical costs can include costs such as clinical services, diagnostic tests, medications etc. These are always included in cost analyses. What is less often included are the direct non-medical costs such as those associated with a public health intervention. For something like social prescribing this could include things like developing a media campaign, training, materials, community of practice and peer support events, the cost of advertising etc. In England today the Voluntary, Community, Faith and Social Enterprise (VCFSE) sector broadly report and complain on the inadequate reimbursement of such costs in the NHS England Directed Enhanced Service (DES) contract funded social prescribing workers which they are forced to support through their own budgets (Cole, et al, 2020). Ordinarily these direct non-medical costs are often not known, not reported on and certainly not included in economic analyses. These would ordinarily include all the resources that are forgone to participate in an initiative, typically measured as lost wages or lost leisure time. No social prescribing evaluation as far as we know has reported fully on this.

Financial costs should ordinarily be distinguished from the broader concept of economic costs. Whereas the financial costs are the actual financial costs expended for services, typically the actual costs of an initiative in a public health context should also include program costs. Examples of financial costs include staff salaries, rent, and supplies. In addition to financial cost expenditures, economic costs should include the opportunity costs or value of a resource for which there is no direct outlay (the value of the benefit that could be derived from the next best use of that resource). Examples of opportunity costs that should be included but rarely are included, e.g., is the value of volunteer time, space in the local public health department, and donated materials and supplies. Economic costs or financial costs should be used to compare alternative interventions but, even if such costings are present, they are rarely differentiated or included in social prescribing evaluations.

The time frame of an economic study is also important in interpreting economic findings. The time frame is the period during which the intervention or in this case

social prescribing is delivered along with any necessary follow-up. In contrast, the ‘time horizon’ refers to the entire period during which the costs and benefits are measured. In most studies all the important results of an initiative are often measured in the short term, making the time horizon short. For an initiative like social prescribing, and those adopting a holistic (Kimberlee, 2015) approach, who anticipate benefits accruing over a longer time when outcome and output data collection may have ceased to comply with commissioner or funder demands, means we do not ever assess the full value of all impacts or outcomes. Wellbeing benefits will be realized over a long time often after a social prescribing initiative has been concluded and will arguably span a person’s lifetime which will not ordinarily align to short-term data collection for an economic analysis.

Economic analysis should also consider the nature and scale of the social prescribing initiative start-up versus its maintenance phase, the target population, and the setting in which the intervention was delivered. For example, most social prescribing initiatives are small scale and unique and are not aimed at a large homogeneous population. This makes comparisons across initiatives with their different start up times, population focuses and scales difficult. What is more, reported information on start-up times, and target populations in evaluation reports are quite rare and are rarely reported in research.

Scale is important. A social prescribing initiative may have high intervention costs, but through economies of scale, the cost per person of the social prescribing initiatives are likely to be less than for a traditional public health intervention aimed at a larger population. In addition, costs will vary by geographic region, which can also affect the applicability of an economic evaluation. Economic evaluations should consider and report on all these factors, which affect the costs of social prescribing and the potential Return on Investment (ROI).

Additionally, health values (preferences) are generally elicited from a small set of individuals and may not be representative of the population. This extends into another important issue around validating economic evaluations (Cabinet Office, 2012). Few health economic studies consider these elements. Only SROI approaches insist that this is an important aspect of any economic analysis and an SROI study can only be assured if it has validated its findings and then individually and independently checked by an SROI credited assessor (Social Value UK, 2021).

Importantly, the quality of any Return on Investment (ROI) estimates in social prescribing studies hitherto undertaken have suffered from a lack of accurate data to inform the calculations. Some studies used only patient reported use of services or GP reports of perceived drops in demand, both of which are subject to bias, leading to potentially inaccurate estimates. One study had extrapolated their demand figures from the results of similar studies in other parts of the UK (Farenden et al., 2015). Many economic evaluations focus on the delivery of social prescribing by looking at the cost and value of link workers and the scheme. However, many evaluations do not account for the cost and contribution of

delivery services following service user referral to activities and services, often provided by the voluntary sector.

More sophisticated economic evaluations adopting a randomised or a matched control could provide more rigorous evidence of economic impact. Furthermore, economic evaluations adopting different methodologies could also provide a more balanced assessment of economic impact.

Future

Some of our team believe that more sophisticated economic evaluations, adopting a randomised or a matched control, could provide more rigorous evidence of economic impact; others remain sceptical whether this can be done with a complex system approach delivered through social prescribing.

We would argue that what is needed is the use and development of economic models in situations where controlled studies are not possible. Studies should identify intersectoral costs and consequences and develop ways of comparing the value of outcomes in different sectors, potentially through new approaches to valuation. This is particularly important in the UK as systems move to Integrated Care Systems for effective planning and delivery to meet diverse local need. More research is required on the alternative methods for incorporating equity considerations within economic evaluations (Drummond et al, 2008); a theme that has been continually raised in reflections on efficiency and equity (Wanless, 2004, Marmot, 2020).

Summary of additional evidence located

To build on, update and expand the expert review a literature search was conducted using both bibliographic databases for journal articles and internet searches for grey literature. As a result of the database search, 107 studies were retrieved, with an additional 20 from the grey literature searches. Following screening against our eligibility criteria and removing sources that were either included in the Polley et al (2017) review, or summarised above, we were left with **five additional sources** of economic information, of which two were journal articles, and three were service evaluations.

Critical appraisal

Within health economics there have been various attempts to improve the understanding of the quality of economic evaluations in health and various checklists have been developed to assess adherence of an economic evaluation to specific quality standards. These range from a 20-item checklist from the Consensus on Health Economic Criteria (CHEC) project to shorter checklists such as those produced by CASP-UK and the Joanna Briggs Institute. Whilst some checklists allow reviewers to generate a score, the JBI Checklist (Joanna Briggs Institute, 2017) is aimed at highlighting areas of methodological concern. The JBI

Checklist was chosen to appraise the studies in this evidence update. Questions elicit a 'yes', 'no', or 'unclear' response. We did not combine the scores into a single metric, but the main methodological characteristics are summarised below.

Of these five sources, two presented findings from a full Social Return on Investment analysis (Foster et al, 2021; Envoy, 2018), one took an SROI approach (Age UK, 2018) and two calculated service delivery costs and corresponding costs of health and social care services (Ways to Wellness, 2021; Elston et al, 2019). There was a range of approaches to the creation of a comparator data set. Of the SROI analyses, only one (Foster et al, 2021) used any sort of comparison which were UCLA Loneliness Scale outcome data from a longitudinal study and used these to compare loneliness scores with users of the social prescribing service. In the service delivery cost analysis studies, health and social care service use were compared to 12-month pre-service data (Elston et al, 2019) or to a matched cohort of patients with no access to the social prescribing service (Ways to Wellness, 2021). Neither of these studies considered differential timing, incremental costs, or variations in the assumptions. The two full SROI analyses both engaged with a range of stakeholders, justified their valuations using credible sources and considered variations in the assumptions made with sensitivity analyses. Discounting was applied in the Envoy (2018) analysis but not in the Foster et al (2021) study, because the model was only based upon one year.

Summary

The largest study was by undertaken by University of Sheffield (Foster et al, 2021) on behalf the British Red Cross. This used a pre-post analysis of over ten thousand users of a national social prescribing service over 30 months up to December 2019. **The improvement to service user subjective wellbeing was valued at £5425 per person.** This value was adjusted for inflation, deadweight and discounting. The final net value of the service incorporated the subjective wellbeing value with missed healthcare appointments, volunteer wellbeing, and service delivery costs. **The Social Return on Investment was valued at £3.42 per £1 invested** which was based upon an investment of £4.7m leading to outcomes worth £11.5m. Foster et al (2021) acknowledged that the modelling was sensitive to the value placed upon the subjective wellbeing and estimated 95% confidence interval of between £2.40 and £4.45 for each £1.

The Kensington and Chelsea Self Care social prescribing model is aimed at people aged over 65 with long term conditions (Envoy, 2018). Their SROI analysis based on 800 older adults over a pilot year to March 2017 included a suite of health and wellbeing outcomes such as EQ-5d, WEMWBS, PHQ-9, ICECAP-A and SF-12. These were evaluated along with observed improvements in pain, depression and anxiety. The values, based on £20k per QALY, were included in the calculations together with healthcare costs such as primary and acute care usage. **Over the first year of the service, the SROI for every £1 invested was estimated at £1.90** after allowing for attribution of other factors which affect patient health and wellbeing.

The authors offered a more favourable SROI of £1:£2.25 if the higher threshold of £30K per QALY were used.

A social prescribing project in Lewisham and Southwark, also aimed at people aged over 60, but not limited to people with medical morbidities, was hosted by Age UK. Their analysis was based on 926 users of the service over an 18-month period until February 2018 (Age UK, 2018). This was not a full SROI, but considered a range of outcomes including fire safety, crime prevention and falls. The evaluation of savings included improved wellbeing, decreased falls, fire safety, reduction in crime, reduction in usage of healthcare services and statutory services. These were valued at £356K following an initial investment of £72K leading to a **SROI of £4.91 for every £1 invested**.

Two analyses of service delivery costs were Ways to Wellness (2021) and Elston et al (2019). The larger of these, Ways to Wellness is a social prescribing service for adults in Newcastle with specific long-term conditions. Over six years, 5.8K patients used the service up to March 2021. These users were matched with a comparison cohort in the city and their **reduced healthcare usage was estimated to have saved £4.6m over 5 years**. The costs of service delivery were estimated at £1m net.

In South Devon, the service reported by Elston et al (2019) was provided for individuals aged over 50 with at multiple long-term conditions. In this cost analysis, the comparator was usage of health and care service usage in the 12 months prior to contact with the link worker. Based on a sample of 86 patients with healthcare outcome data, the analysis showed a **mean increase in health and social care costs from £387K to £749K**. This was despite observed improvements in quality of life, patient activation and reduced frailty. The increase in costs was attributed to a small number of users whose health requirements and associated costs dramatically increased during the same period.

PROGRESS-Plus

The five sources were assessed for their reporting of economic outcomes in relation to the specific groups indicated by the PROGRESS Plus framework <https://methods.cochrane.org/equity/projects/evidence-equity/progress-plus>. All of the social prescribing services evaluated were provided for either older adults with long term health conditions, or for older adults, or for adults with a focus on loneliness. The Envoy (2018) analysis reported resource savings specifically for frail elderly and dementia patients.

CONCLUSIONS

The economic evidence presented in this review, from across England, represents a diversity of social prescribing approaches, aimed at a variety of target populations. These differences in population, pathway, and outcomes mean that formal quantitative synthesis is inappropriate.

However, we highlight throughout the main findings of these studies and overall, the evidence demonstrates a favourable SROI in most cases where a range of outcomes and costs are considered.

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Appendix 1 - Additional searches, search strategy

Scopus

```
( TITLE-ABS-KEY ( "social* prescrib*" ) OR TITLE-ABS-KEY ( "social prescription*" ) OR TITLE-ABS-KEY ( "community referral*" ) OR TITLE-ABS-KEY ( "social referral*" ) OR TITLE-ABS-KEY ( "non-medical referral*" ) OR TITLE-ABS-KEY ( "link worker*" ) OR TITLE-ABS-KEY ( "care navigator*" ) ) AND ( TITLE ( cost* OR economic OR value ) OR TITLE-ABS-KEY ( ( cost* W/3 ( effective* OR utility* OR benefit* OR minimi* OR model* OR analys* OR consequence OR impact* OR implication* OR service* OR savings ) ) OR ( economic W/3 ( analys* OR model* OR evaluat* OR impact* OR implication* ) ) OR ( health W/3 cost* ) OR ( return W/3 investment ) OR ( value W/2 ( money OR social OR proxy ) ) ) )
=97
```

Web of Science

```
TS=( "social* prescrib*" OR "social prescription*" OR "community referral*" OR "social referral*" OR "non-medical referral*" OR "link worker*" OR "care navigator*" )
AND
```

TS=((cost* near/3 (effective* OR utility* OR benefit* OR minimi* OR model* OR analys* OR consequence OR impact* OR implication* OR service*)) OR (economic near/3 (analys* OR model* OR evaluat* OR impact* OR implication*)) OR (health near/3 cost*) OR (return near/3 investment) OR (value near/2 (money OR social OR proxy)))
=60

Total = 157
After de-dup - 107

Google

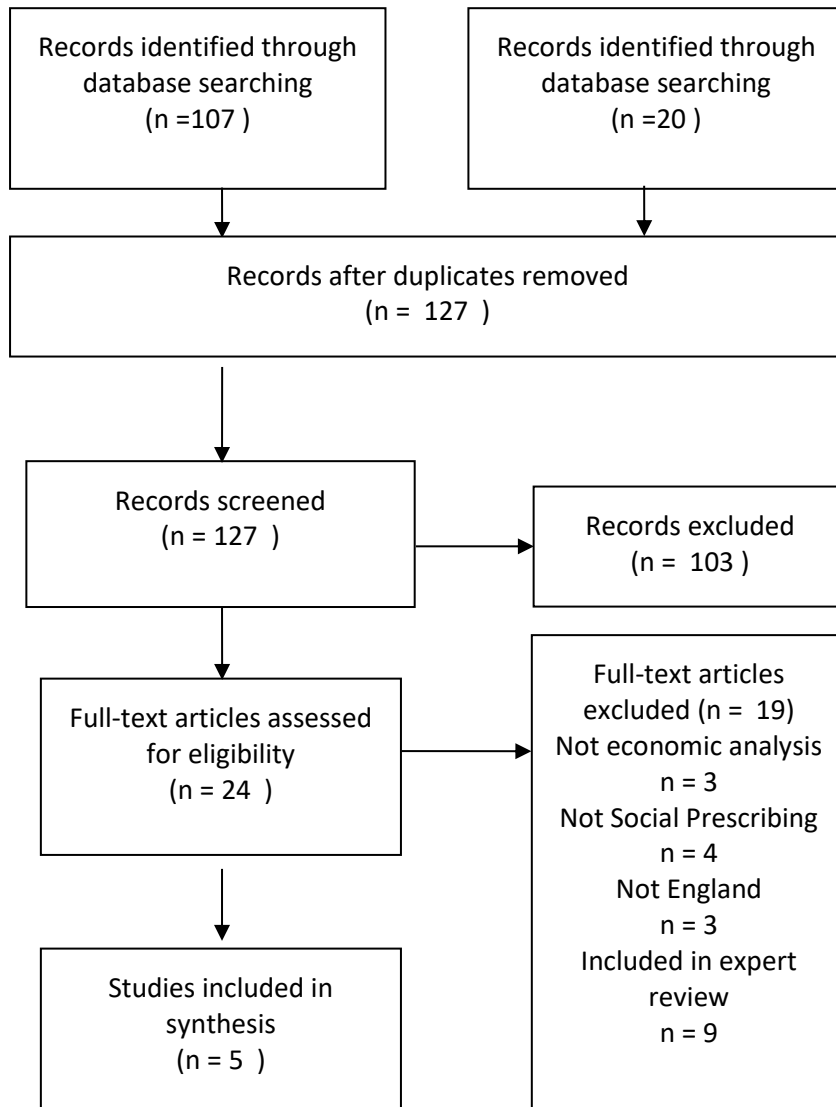
allintitle: (""social prescribing"" OR ""social prescription"" OR ""link worker"") AND (cost OR costs OR economic OR value)
(allintitle: ""social prescribing"" OR ""social prescription"" OR ""link worker"") AND (cost OR costs OR economic OR value)
(""social prescribing"" OR ""social prescription"" OR ""link worker"") AND (cost OR costs OR economic OR value)"
= 15

CRD:
"social prescribing" OR "link worker" OR "social prescription" = 1

CEA
"social prescribing" OR "link worker" OR "social prescription" =0

Appendix 2

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram for additional search element. This diagram depicts the flow of information through the different phases of this review. It shows the number of records identified, included and excluded, and the reasons for exclusions.



Sheffield Hallam University

The economic impact of social prescribing

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