

INVESTING
TO TACKLE
LONELINESS

A
DISCUSSION
PAPER



Cabinet Office



CALOUSTE GULBENKIAN
FOUNDATION
UK BRANCH

Nesta...

CONTENTS

1	Acknowledgements
2	Introduction
4	Scope
6	The costs of loneliness
14	Preventing or addressing chronic loneliness
18	Measuring loneliness
22	Targeting the intervention
24	Considering an outcomes-based contract and social investment
26	Agreeing a payment mechanism
27	Conclusions
28	Appendix: Cost benefit analysis
31	About the authors

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The Calouste Gulbenkian Foundation is an international charitable foundation with cultural, educational, social and scientific interests. The Foundation is based in Lisbon with offices in London and Paris. The UK Branch aims to bring about long-term improvements in wellbeing, particularly for the most vulnerable, by creating connections across boundaries (national borders, communities, disciplines and sectors) which deliver social, cultural and environmental value. For more information please visit: <http://www.gulbenkian.org.uk/>

Nesta and the Calouste Gulbenkian Foundation are development partners to Social Finance for the Reconnections Social Impact Bond. As development partners they are supporting the Reconnections service to develop volunteer resources, test new approaches to addressing loneliness in later life transition points, commission an independent evaluation, and promote the dissemination of learning to other local authorities and voluntary organisations.



INTRODUCTION

Increasing awareness of the effects of loneliness on older people has catalysed new ways of thinking about loneliness and social isolation as central health issues. However, challenges remain in assessing the costs of loneliness to the public sector and in designing and commissioning new services to tackle this issue.

The following paper details work undertaken with Age UK Herefordshire & Worcestershire to design a service that addresses loneliness, particularly among older people. The report introduces potential costs of loneliness to the public sector and sets out our initial findings based on available evidence.

It describes one model of commissioning services through a Social Impact Bond, which offers value to both commissioners and service providers. A Social Impact Bond (SIB) is a contract in which commissioners commit to pay investors for an improvement in social outcomes (in this case to reduce loneliness). Investors receive returns if, and only if, these social outcomes are achieved.

In May 2015, Worcestershire County Council, South Worcestershire CCG, Redditch & Bromsgrove CCG and Wyre Forest CCG jointly commissioned the “Reconnections Social Impact Bond” to alleviate loneliness. Through this process of designing, contracting and delivering a SIB with Worcestershire stakeholders, we have found that a Social Impact Bond can be a viable way to fund and test innovative ways of identifying and supporting those suffering from loneliness.

The development of a SIB has also encouraged us and our partners to explore questions such as the most appropriate service design, the groups of older people who would benefit most from a service and the options for measuring loneliness.

We consider that the SIB model adds to the range of options available to commissioners looking to establish such services. We hope that this paper stimulates discussion of the Social Impact Bond approach and consideration of ways to alleviate loneliness by commissioners. We will provide further information as the service develops in Worcestershire and potentially other parts of the country.

1 Scope

Loneliness has been increasingly recognised over the last ten years as a key determinant of health and wellbeing. There has been significant interest in addressing loneliness amongst many local authorities and NHS commissioners, but few solutions have demonstrated robust evidence of impact and the ability to scale. Barriers to implementing effective loneliness programmes include a lack of information on its cost and mixed evidence base of success.


The first half of this paper addresses these challenges, summarising our best judgements of:

- The costs of loneliness and potential value to the public sector of reducing loneliness
- An effective intervention model for alleviating loneliness

The second half of the paper describes an outcomes-based model that is being used in Worcestershire to tackle loneliness and might be implemented elsewhere. It sets out some of the benefits of using social investment to fund the upfront cost of delivering a service to reduce loneliness. We discuss the following elements of the model:

- Measuring loneliness and additional outcomes
- Delivering support to the population most at risk
- Considering social investment
- Agreeing a payment mechanism

Social Finance developed this model through partnership working with national and local stakeholders. In particular, the cost/benefit model drew on expertise from health economists at Matrix Knowledge. The operational model was developed with Age UK Herefordshire & Worcestershire with input from other voluntary and community sector service providers. We also drew on the knowledge of the Campaign to End Loneliness and local areas exploring loneliness and its impact on their public sectors. While we are grateful for the support of all of these organisations, responsibility for this provisional analysis, including any errors, rests with Social Finance. We welcome comments and feedback on the assumptions and conclusions of this work and hope to further develop both the evidence base and the service in partnership with commissioners and providers.



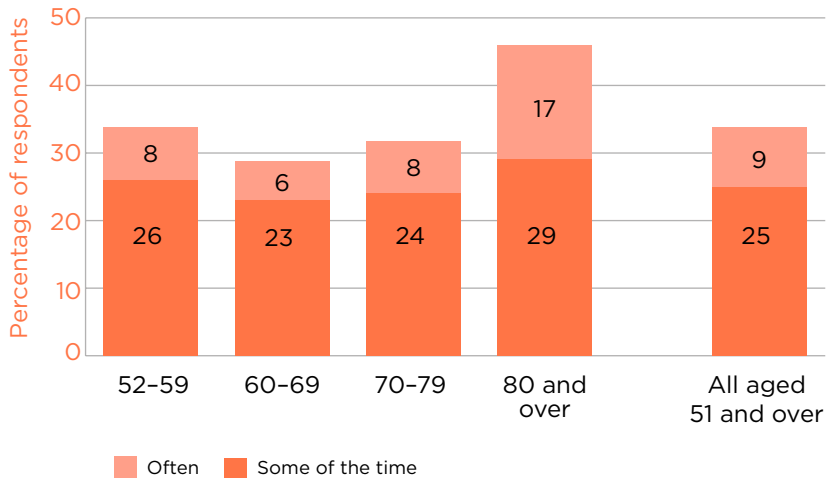
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2 The costs of loneliness

Loneliness is typically defined as the difference between people’s desired and actual social relationships.¹ It is conceptually distinct from ‘social isolation’, which describes the quantity (rather than quality) of an individual’s social contacts. For most people, loneliness ebbs and flows with particular events (e.g. the loss of a loved one), but for 10% of the older adult population in Britain loneliness is a chronic feeling and a heavy burden. In October 2013, Jeremy Hunt, Secretary of State for Health, highlighted 800,000 lonely adults as a source of national shame.

The correlation between loneliness and age suggests that loneliness is likely to be a growing concern, as the baby-boomer generation gets older and the number of vulnerable older adults grows.

Figure 1: Frequency of loneliness, by age



Source: *English Longitudinal Study of Ageing*, Wave 5, 2009-10.

¹ Masi, Chen, Hawkey and Cacioppo. (2011) A meta-analysis of interventions to reduce loneliness. *Personality and Social Psychology Review*.

Service providers, public service commissioners and politicians increasingly recognise loneliness as a serious social issue and an established risk factor for both directly increased health and social care service usage and the development of particular health conditions.²

- The impact of isolation and loneliness on mortality is equivalent to smoking 15 cigarettes a day³
- Isolation and loneliness are linked to depression, anxiety, declining mobility, high blood pressure and increased mortality rates⁴
- Loneliness reduces older people's immediate quality of life⁵

However, agreeing the precise costs of loneliness and the best ways to address it is difficult and has prevented commissioners from addressing loneliness at scale. Programmes to address loneliness are often not well-evaluated compared to interventions for other health conditions. In response, Social Finance worked with Matrix Knowledge health economists to develop an approach to modelling the impacts of loneliness that draws on available sources and provides an assessment of the potential value on public sector expenditure.⁶ Whilst the overall evidence of the relationship between loneliness and self-reported health and well-being is strong, the impact on service usage and specific conditions has required significant judgement to be applied.

We acknowledge the limitations of this approach and it will be important to use evaluations from current and future loneliness programmes to further understand and refine these links. For example, many of the current studies draw on evidence from other countries. Causality in the relationship between loneliness and health – particularly mental health – is complex and can also be difficult to determine.

² We recognise that there is a difference between loneliness – the subjective feeling of one's relationships – and social isolation – the objective number or types of relationships/activities. We refer to the evidence base for both but suggest that loneliness is measured by commissioners as it appears to have a more evidenced impact on health.

³ Holt-Lunstad, J, Smith TB, Layton JB. (2010) "Social Relationships and Mortality Risk: A Meta-Analytic Review" *PLoS Med* 7(7).

⁴ *Ibid.*

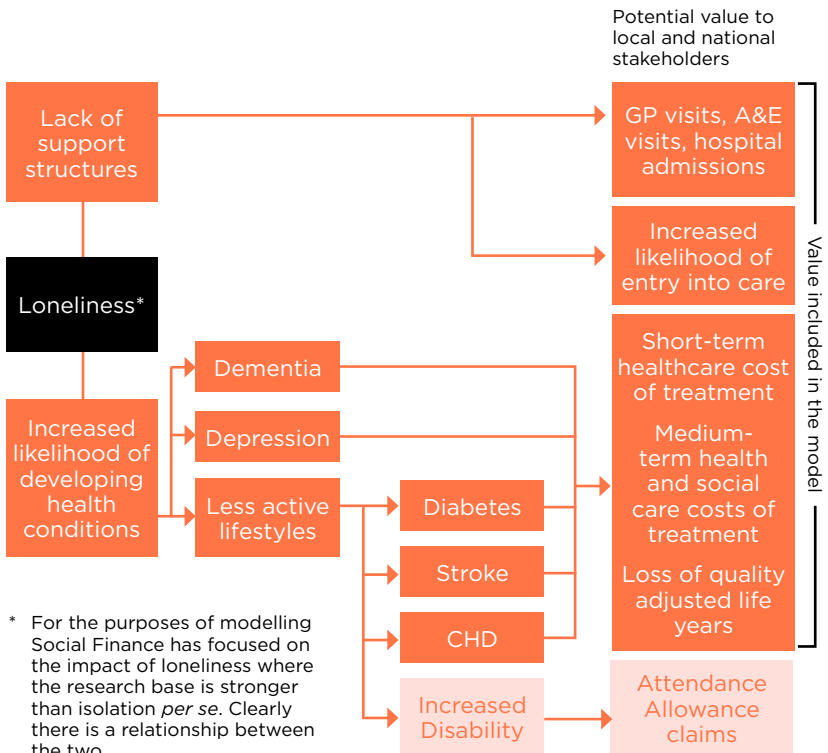
⁵ Ekwall, Sivberg and Hallberg (2004) "Loneliness as a predictor of quality of life among older caregivers," *Journal of Advanced Nursing*, 49 (1).

⁶ Matrix Knowledge supported the development of this model, but responsibility for final calculations and assumptions rests with Social Finance.

Nevertheless, given the pressing nature of this issue, we consider that it is important to establish some strong hypotheses in this field and are sharing our analysis in order to inform discussion and further refinement of the model.⁷ We also intend to share the results of an independent evaluation of the impact of the Reconnections loneliness service in Worcestershire on health and social care service usage; a preliminary report will be available by January 2017.

Figure 2 shows our assumptions of how loneliness affects service usage. One set of impacts is direct and the other shows an increased

Figure 2: The impact of loneliness on public sector resources



⁷ Whilst elements of the model have drawn on Matrix Knowledge health economists, the overall model has not been peer reviewed - this is a discussion paper for comment.

probability of developing conditions which will lead to an indirect impact of loneliness on public sector expenditure. It is likely that this diagram does not capture all aspects of loneliness, including readmission to hospital or the effect on required domiciliary care.

IMPACTS OF LONELINESS

A direct and short-term cost of loneliness is the more frequent use of public services, which may be due to a lack of support networks and eroded personal resilience. For example, an older person who is isolated and lonely may visit the GP frequently because they do not feel they have anyone to talk to about their feelings.

Drawing on specific studies, some from the UK and others from overseas,⁸ our judgment is that when compared to people who are never lonely, older people who are lonely are on average:

- 1.8 times more likely to visit their GP;
- 1.6 times more likely to visit A&E;
- 1.3 times more likely to have emergency admissions; and
- 3.5 times more likely to enter local authority-funded residential care.

In addition to these short-term effects, loneliness also influences the likelihood of developing certain health conditions, which will increase service usage in the medium to long-term. When compared to a population of older people who are never lonely, older people who are always or often lonely can be:

- 3.4 times more likely to suffer depression;
- 1.9 times more likely to develop dementia in the following 15 years; and
- Two thirds more likely to be physically inactive, which may lead to a 7% increased likelihood of diabetes, 8% increased likelihood of stroke and 14% increased likelihood of coronary heart disease.

Sources for these studies are set out in the Appendix.

⁸ The applicability of international studies to the UK context should be tested and further evaluated.

Other outcomes have been excluded, although they are likely to have an impact. These include:

- The increased likelihood of requiring domiciliary care;
- The increased likelihood of anxiety;
- The increased likelihood of developing chronic lung disease;
- The increased likelihood of developing arthritis and mobility impairment; and
- A direct increase in claiming benefits including Attendance Allowance for mobility-related assistance.

COSTS OF LONELINESS

We used the ratios described above to assess the average ‘cost’ of being chronically lonely to the public sector. Using national averages for baseline service usage of older people, we estimated that increases in service usage create a cost to the public sector of on average c. £12,000 per person over the medium term (15 years).

Table 1 illustrates components of lifetime costs associated with loneliness. For modelling purposes we have assumed that the annual costs of loneliness associated with GP visits, A&E visits and unplanned admission will last for two years. In reality the effects could be much longer. We have also estimated the likelihood of entering residential care and of the onset of particular health conditions over the lifetime of the individual. For example, dementia onset happens on average at age 71 and the average age of death for those with dementia is 80. The costs of treating dementia are therefore assumed to be over nine years. If looking to adopt this research, commissioners should use cost data that is relevant for their local area.

Combining the costs above with assumptions around the duration of impacts implies that chronic loneliness may cost commissioners £12,000 per person, of which approximately 40% occurs within five years (GP visits, A&E visits, hospital admissions, residential care, some costs associated with depression and diabetes).⁹

⁹ We use a net present value calculation to ensure that costs are discounted when occurring in the future. Costs also reflect assumptions about the age of condition onset.

Table 1: Costs of loneliness

Public sector costs	Average older pop (assumed non-lonely)	Older people who report feeling lonely	Difference between average and lonely population	Cost of service use	Incremental cost of loneliness per person
Annual cost of increased services resulting from lack of support					
GP visits	7 p.a.	13 p.a.	6 p.a.	£25 ⁹	£150 p.a.
A&E visits	0.40 p.a.	0.65 p.a.	0.25 p.a.	£108	£27 p.a.
Unplanned admissions	0.25 p.a.	0.32 p.a.	0.07 p.a.	£800	£56 p.a.
Medium term costs resulting from increased likelihood of service usage or condition onset					
Likelihood of residential care	2%	7%	5%	£45,000 of care over 2 years ¹⁰	£2,250 net present value
Depression	20%	66%	46%	£4,700 of treatment over 5 years	£1,975 net present value
Dementia	7%	14%	7%	£107,000 of treatment / care over 9 years	£4,800 net present value ¹¹
Physical inactivity (leading to increased risk of diabetes, stroke and coronary heart disease)	35%	95%	60%	£6,000 of treatment/ care over 15 years	£2,700 net present value

¹⁰ This saving is likely to be a productivity gain only.

¹¹ Based on £433 per week for Local Authority funded residential care in Worcestershire. Average length of two years in care (104 weeks).

¹² The average age of onset of dementia is 71 and this cohort assumes an average age of 65. The costs of dementia are therefore discounted to reflect the net present value, which substantially reduces the incremental cost figure.

Finally, we have undertaken a partial analysis of the longer term effects of dementia and inactivity on Quality Adjusted Life Years (QALYs) lost due to these conditions. QALYs are used in public health to determine the cost-effectiveness of an intervention. The increased likelihood of developing dementia, depression, stroke, diabetes and coronary heart disease (CHD) over a 15 year period is likely to be associated with 1.3 QALYs lost per person. QALY calculations depend on many assumptions and we are therefore seeking to test this assessment further.

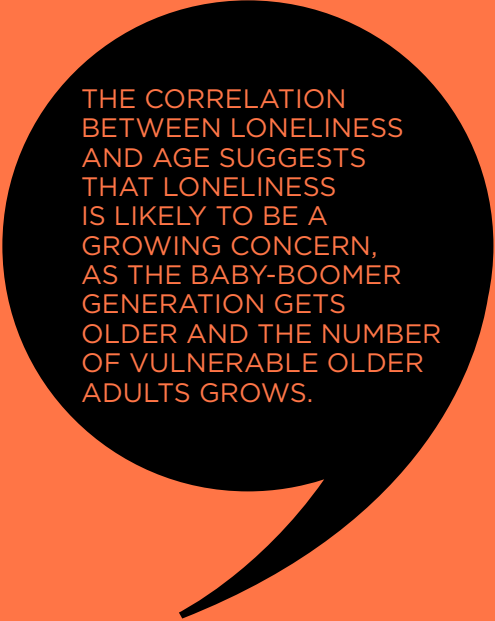
For a typical local authority with a cohort of 5,000 older, lonely individuals, the future effects of loneliness (excluding QALY and quality of life impacts) could therefore be valued at c.£60m of cost to the public sector over the following 15 years. It will not be possible to eliminate these costs entirely. A conservative estimate from specific studies suggests that 6% of individuals became 'non-lonely' following an effective intervention.¹³

Assuming value only from the individuals who cross over the loneliness threshold, we judge that 6% of costs due to lack of support structures and increased likelihood of condition onset (excluding QALY value) could be met. This equates to an average value gain of c.£720 per person or £3.6m for a cohort of 5,000 lonely individuals.

Other older people would be likely to have a partial reduction in loneliness (for example ceasing to 'often' feel lonely but still 'sometimes' feeling lonely). Assuming that service use falls proportionately to people's severity of loneliness, we estimate that an effective intervention could lead to a reduction in future service use of 17%. This equates to an average value gain of £2,040 per person or £10.2m for a cohort of 5,000 lonely individuals.

In summary, we consider the likely value of a successful programme could be in the range of £770–£2,040 over the life of an individual.

¹³ See Stevens & Van Tilberg, (2000) "Stimulating Friendship in Later Life," *Educational Gerontology*.



THE CORRELATION
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3 Preventing or addressing chronic loneliness

Previous delivery and commissioning of programmes to reduce loneliness have yet to achieve the scale and impact that will be required to address the challenge of at least 800,000 lonely older people nationally. High profile attempts to catalyse greater social connections, such as the Partnerships for Older People Projects and the LinkAge Plus pilots, have had mixed results. Many services that had positive impacts across other indicators have found it challenging to prevent a decline or show a sustained improvement in loneliness.¹⁴

However, drawing on specific international evidence, there are interventions with positive and well-evaluated results of tackling loneliness. Of seven meta-analytical reviews of loneliness interventions conducted since 1984, six have concluded that specific interventions are able to address loneliness. The comprehensive review by Masi *et al.* in 2011 found that the most effective interventions were those addressing maladaptive social cognition (low/negative self-esteem).¹⁵

These include interventions that offer one-on-one support to communicate feelings, group interventions on practicing and developing listening and communication skills, group reminiscence sessions, and one-on-one counselling sessions on reframing one's perception of loneliness and self-control.

Interventions that aim to increase opportunities for social interactions and enhance social support are more likely to impact social isolation, whereas loneliness may result from an individual's lack of confidence in interacting with others. Interventions with a cognitive aspect, including improving social skills and building confidence, address the subjective nature of loneliness and can improve an individual's perception of relationships.

Social Finance and Age UK Herefordshire and Worcestershire have combined best practice from this evidence base and on-the-ground experience to develop a model to address loneliness.

¹⁴ See, for example, "LinkAge Plus national evaluation: End of project report," (2009) DWP Research Report No 572.

¹⁵ Masi *et al.* (2011) "A Meta-Analysis of Interventions to Address Loneliness," *Personality and Social Psychology Review*.

The approach focuses on identifying and engaging individuals who are lonely or at risk of loneliness, followed by a period of personalised volunteer-led support to access community-based activities or informal networks. The aim is to better connect individuals to their communities through their own interests while overcoming barriers to engaging with neighbours or community groups.

The service model is focused on overcoming challenges highlighted by evaluations from other programmes. We use the following three principles:

1. Investment in engaging with the right people at the right time.

Many programmes that have limited impact fail to target appropriate participants at the critical time when a transition point leads to loneliness, such as after bereavement or a reduction in mobility. Engaging with GPs, housing associations, social care and the wider community, together with robust screening tools will be central to overcoming these pitfalls.

2. Support for older people to feel confident interacting with their communities.

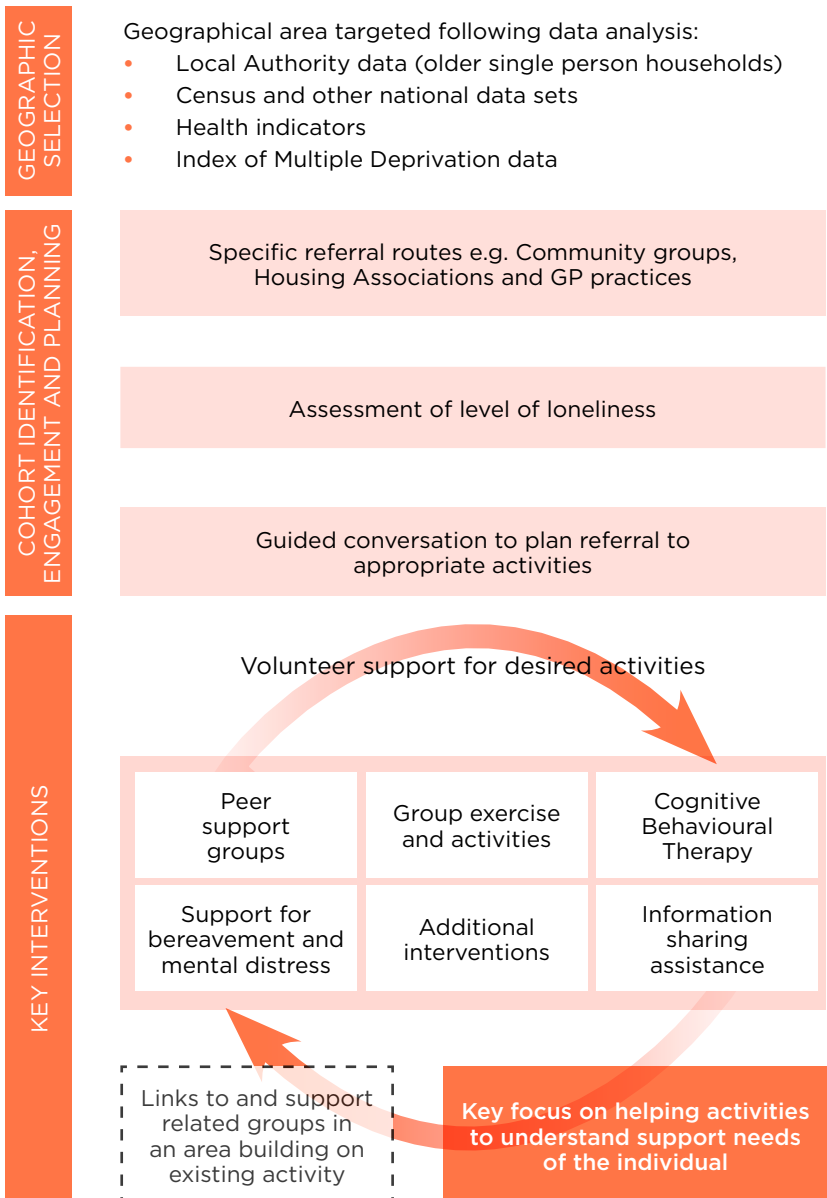
The approach prioritises understanding people's needs, strengths and aspirations, working with individuals to plan their re-engagement with others and linking them with a supportive volunteer to help them navigate the development of these connections.

3. Mutual support and progression to entirely informal care

The aim is to support people into an initial activity, which may be relatively specialised, such as low-level cognitive behavioural therapy, or part of mainstream community life, such as an exercise class. A volunteer may stay in touch with them during this period, but the client will not be dependent on volunteers for years to come. Rather, the approach is to link people into a community of mutual support in which they, in turn, can participate in engaging with and helping others.

The management of these referral routes, personalised support, volunteers and wide variety of activities requires the careful coordination of a range of partners. As the operational model is implemented in Worcestershire, Social Finance aims to provide more details of the delivery model and the learning from mobilisation.

Figure 3: Design process of operational model



THE RECONNECTIONS APPROACH FOCUSES ON STRONG ENGAGEMENT WITH LOCAL STAKEHOLDERS, SO THAT INFORMATION ON REFERRALS AND ENCOURAGEMENT FOR SELF-REFERRALS CAN BE SPREAD THROUGH WORD OF MOUTH AND ENCOURAGED BY LOCAL CHAMPIONS.

4 Measuring loneliness

A better understanding of the impact of specific approaches to addressing loneliness is, we consider, a critical element to further developing and scaling a programme. Clarity on the measurement of loneliness should therefore be a central element to the programme design and delivery, both for commissioners and providers. For the Reconnections SIB, we considered that measuring loneliness at referral, after six months (following the majority of service delivery) and at eighteen months would provide a rounded assessment of the impact of the programme.

The Revised UCLA Loneliness Scale has strengths as a measurement tool for loneliness. The original 20-item scale was introduced in 1978 and revised twice, when it was also validated for use with older people. The scale consists of a number of statements and asks the respondent to answer with how often they feel what is being described. From the 20-item scale, several number of shortened scales have been developed, including the 4-item scale selected for use in the Reconnections SIB.

The 4-item Revised-UCLA scale asks four questions with three potential answers each. It is an attractive metric due to its validity with the longer 20-item survey and ease of administering over the phone. This metric is used in the English Longitudinal Study of Ageing (ELSA), which has collected data from over 10,000 adults aged 50 and over since 2002. The

Table 2: The Four-Item Loneliness Scale

Lead-in and questions are read to respondent.

Lead-in: The next questions are about how you feel about different aspects of your life. For each one, tell me how often you feel that way.

Question	Hardly Ever	Some of the time	Often
First, how often do you feel that you lack companionship?	1	2	3
How often do you feel left out?	1	2	3
How often do you feel isolated from others?	1	2	3
How often do you feel in tune with the people around you?	3	2	1

Note: The score is the sum of all items.

Revised UCLA Loneliness Scale therefore allows us to assess whether loneliness in a local population reflects the national picture, when stratified by age and risk factors. This is useful for determining likely numbers of older lonely people in local populations.

There are however alternative measures that providers and commissioners could use. There are advantages and disadvantages of each measure. For example, although widely used in national surveys of older adults, the Revised UCLA Loneliness Scale was not originally designed for older people. The 11-item De Jong Gierveld scale is also widely used to measure loneliness and has some advantages but requires a longer questionnaire and is not used in ELSA. Additionally, the Campaign to End Loneliness has commissioned the design of a bespoke survey for older adults at risk of loneliness. This may be a useful tool for future commissioners measuring loneliness.

Commissioners should consider each possible metric using the following criteria:

- Reliability and validity of metric
- Ease of administering the survey over the phone or in person
- Potential to benchmark results against UK data

Table 3: Loneliness metrics

Metric	Development
Revised UCLA Loneliness Scale	20-item and shortened 4-item scale designed to measure subjective feelings of loneliness. Each question is rated from 1 (Never) to 4 (Often) or 1 (Hardly Ever) to 3 (Often), dependent on the version. Used in the English Longitudinal Study of Ageing.
De Jong Gierveld Loneliness Scale	11-item and shortened 6-item scale designed to measure overall, emotional and social loneliness. Some statements are framed positively and some negatively; each is scored on a five or three step response from “Yes!” to “No!” to indicate level of agreement with each statement.
Single question metrics	Questions include “do you feel lonely?” and “do you feel isolated?” These are used in various national surveys.

In addition to measuring loneliness, our experience from delivering a range of services funded by Social Impact Bonds highlights the importance of collecting leading indicators of likely impact and management information on the operation of programmes. This enables a more thorough understanding of the relationship between activity and outcomes, as well as helping to manage the start-up phase and to identify and solve potential problems early. Indicators of loneliness could include questions about social isolation or levels of satisfaction regarding connections to the community.

Management information:	Leading indicators:
Demographic information, including age, gender, ethnicity, postcode (for socioeconomic analysis)	Progress against action plan created by participant and provider (if applicable)
Health and social care support and unmet need	Level of participation in community (post-intervention start)
Satisfaction with service offered	Participant satisfaction with support (post-intervention start)
Desired level of participation in community	Participant responses to social isolation questions or other loneliness surveys
Desired goals/aims	
Level of support offered by service (number of contacts, actions taken)	
Service start/end date for participant	
Reason for service end	
Service staff/turnover/employment rate	
Service budget and identified under/overspend	
Feedback on individual employees/volunteers	

We propose that services seek to assess the impact of loneliness on health and social care service usage, at least within a proportion of the people referred to the service. This will enable commissioners to better

understand savings resulting from these outcomes. Health and social care outcomes to consider include:

- GP visits
- Anti-depressant prescription usage
- Planned and unplanned hospital admissions
- Readmission to hospital
- A&E visits
- Outpatient appointments
- Support package from adult social care
- Domiciliary support
- Informal support
- Entry to residential care
- Qualitative feedback on whether the service had an impact on sense of wellbeing and health

The number of metrics and time over which they can be measured depend on the amount of funding available and potential burden on recipients and providers of data collection. In rolling out this model, it may be that different elements of long-term impact could be assessed in different areas.

5 Targeting the intervention

Given the importance of using resources effectively, we consider that identification and targeting is critical to a successful scaled approach.

In the Reconnections Social Impact Bond, the 4-item Revised UCLA Loneliness Scale is used to screen potential participants and ensure that the service supports only those most in need. In particular, we aim for at least 80% of the programme participants to score higher than an '8' on the scale running from four to 12. Setting such thresholds and agreeing them between commissioners and service providers guarantees that a service will reach its intended population.


Those most in need, however, also tend to be most difficult to find and engage, particularly if the lonely individuals are also isolated and therefore unlikely to come into contact with the service. In order to maximise the likelihood of finding these individuals, referral pathways for the Reconnections SIB will target those at risk of loneliness and more generally to encourage wider referrals from the community. Targeted pathways will focus on reaching individuals with established risk factors for loneliness. Pathways include:

- Partnerships with GPs who could incorporate the screening tool into their routine visits for older patients
- Partnerships with social care assessment centres, particularly for those people with needs that are not substantial or critical enough to warrant social care
- Active outreach programmes to liaise with those already engaged with lonely individuals, including community organisations, Housing Associations and fire safety assessors

The Reconnections approach focuses on strong engagement with local stakeholders, so that information on referrals and encouragement for self-referrals can be spread through word of mouth and encouraged by local champions.

Geographically, it is possible to identify areas where loneliness is likely to be most prevalent using a combination of risk factors. For

example, Essex County Council used data from Mosaic UK to map risk factors for isolation onto households in the county. Acorn data also provides indicators that could support geographic mapping for isolation and loneliness. Alternatively, local authorities have access to census data at the ward or lower super output area level that can cover similar risk factors.



A BETTER
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6 Considering an outcomes-based contract and social investment

Commissioners in Worcestershire have contracted with Reconnections Ltd on the basis of outcomes – paying only for a demonstrable reduction in loneliness amongst participants. The mixed track record of previous loneliness interventions makes this an attractive option for health and social care commissioners interested in incentivising high performance and only making payments if new services are successful.

Outcomes-based contracts are not always appropriate – payments for activity may be more suitable when a project's impact is difficult to measure or when providers are unable or unwilling to take the risk of meeting payment thresholds. In the case of loneliness, we consider that transferring some or all payments to an outcomes basis could stimulate better and more innovative delivery and could be effectively measured.

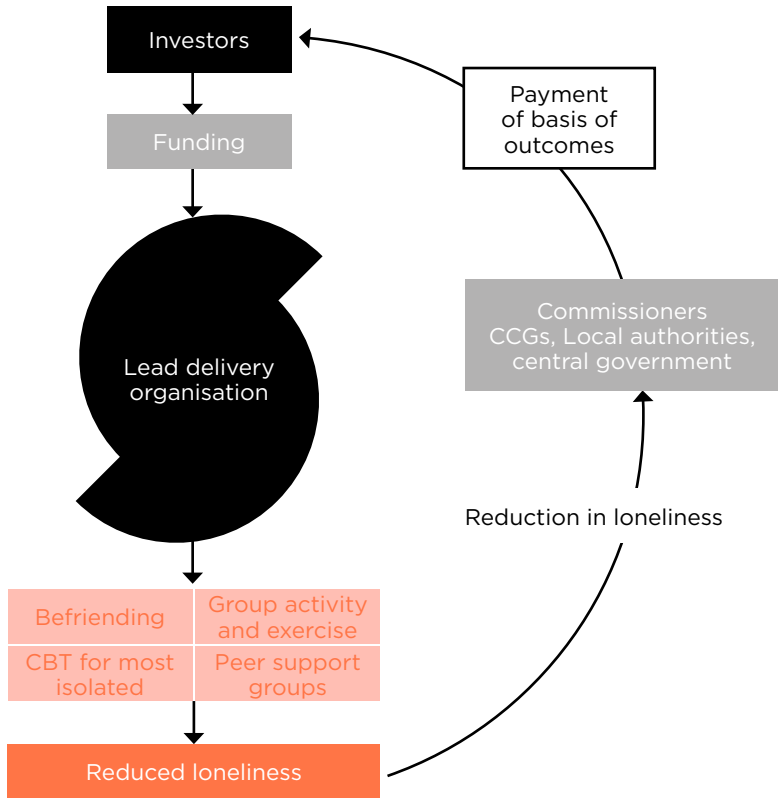
Many of the providers of services are, however, small and do not have adequate capital to fund services up front given the risk of failing to achieve outcome payments. It is for this reason that a Social Impact Bond may be a useful approach to commissioning new services to address loneliness.

A Social Impact Bond is a contract in which commissioners commit to pay investors if there is an improvement in social outcomes (previous examples include improvements in education and employment and reductions in reoffending). Investors receive returns if, and only if, these social outcomes are achieved. In a SIB contract to reduce loneliness, investors' money is used to pay for new services such as those set out in Section 3 and the wider system of referrals, assessment and support. If loneliness falls after the support, investors receive payments from commissioners.

Social investors seek a financial and a social return. They are typically charitable trusts and foundations, individuals and wholesale social investment funds such as Big Society Capital. Social investors may already be familiar with an area in which they are investing, particularly if they already give grants for similar programmes.

Commissioners may wish to specify that a Social Impact Bond is used for several reasons:

Figure 4: A SIB to reduce loneliness



1. **Risk transfer:** SIBs ensure that commissioners transfer risks associated with the service failing to deliver impact. However, because the contract is with investors, providers are not fully at risk if outcomes are not achieved. This is because contracts between investors and providers are generally straightforward fee for service contracts in which the provider is assured a funding stream, barring severe underachievement against KPIs, or only take a small risk.
2. **Investor oversight:** SIBs use social investor oversight as an extra performance management tool. The rigour with which data is collected and analysed in SIB models appears to generate better results than traditionally funded models.

- 3. Innovation and service development:** Because the contract is specified on the basis of outcomes and investors typically enable their funding to be deployed flexibly, the structure of SIBs allows the service model to adapt during its delivery. For example, if the data analysis identifies an unmet need, a supporting service can be commissioned to meet that need or the service model can be altered. Conversely, if one aspect of the service is proven to be ineffective, it can be removed from the delivery model.

Together, these three benefits of Social Impact Bonds have been demonstrating promising results across the UK. Initial results from the Peterborough Social Impact Bond showed an 8.4% reduction in reoffending compared to a matched control group. Eighty percent of children at risk of entry into care on the Essex Social Impact Bond to date have remained safely at home with their families. SIBs aimed at moving young people into employment and education have also demonstrated considerable success.

Commissioners may also wish to consider hybrid payment models. Funding purely on the basis of outcomes allows significant innovation within the service. An intermediate option exists in which a contract is paid only partly on the basis of outcomes. The remainder could be an upfront fee for service, which would require lower investment. Alternatively, a proportion of payments could be tied to outputs, such as the number of service participants.

7 Agreeing a payment mechanism

The payment mechanism codifies the detail of how and when the contracting party will be paid. In the contract held by Reconnections Ltd with Worcestershire commissioners, payments are made following measurements of loneliness at prescribed points in time. Key questions for commissioners to consider include:

- How much will the commissioner pay for the agreed outcome?
- Is there a minimum threshold of improvement that must be met prior to payments being made?
- What is the process for calculating outcome payments?

- Will the provider or commissioner be responsible for calculating outcome payments?
- How will evidence of the outcomes be verified? Where is this cost incurred?
- In the case of disputes over payment, how will they be resolved?

Payments for metrics can be made as simple or detailed as the commissioner desires. For example, a payment mechanism may include statistical ways of accounting for deadweight (the existing outcomes within the population) and attribution (whether or not the intervention was responsible for the impact seen). There is often a trade-off between simplicity and comprehensiveness in measuring impact. The commissioner will need to decide the appropriate payment mechanism in consultation with providers and potential investors but in our experience it is helpful to aim for a relatively simple set of 'tariffs' for impact.

In Worcestershire, payments will be made based on reductions in loneliness (measured by the 4-item Revised-UCLA scale) at six and 18 months following enrolment on the Reconnections service.

8 Conclusion

This paper outlines the case for developing a scaled model for addressing loneliness and the potential value of an outcomes-based contract supported by social investment. We recognise that this area straddles mutual effort and support by individuals and communities with the interests of public sector commissioners. Whilst some may consider this issue difficult for the public sector to engage in, we believe that models of outcomes-based commissioning which allow significant innovation, learning and engagement with a network of voluntary and community sector providers offer a promising approach to combating loneliness.

We would greatly welcome comments on the analysis and approach set out in this paper from commissioners, providers, investors and academics. As the Social Impact Bond in Worcestershire starts to deliver services from Summer 2015, we will seek to provide updated information on the approaches used and the impacts achieved in reducing loneliness and improving wellbeing and service use.

Appendix: Cost benefit analysis

Sources used for relationship between loneliness and health and social care service usage

Public sector item	Average service usage (assumed non-lonely)	Lonely to not lonely service usage ratio	Cost of service/item
GP visits Sources	7 p.a. Polisson, Matthew. "Do Waiting Times Matter in Primary Care? GP Visits and List Sizes in England." University of Oxford (2011).	1.86 Ellaway et al. "Someone to talk to? The role of loneliness as a factor in the frequency of GP consultations." British Journal of General Practice (1999).	£25 "Nurse - GP practice" Unit costs. PSSRU (2010).
A&E visits Sources	0.40 p.a. "Emergency admissions to hospital: managing demand." NAO	1.6 Geller et al. "Loneliness as a predictor of hospital emergency department use." Journal of Family Practice (1999).	£108 "A&E Attendance" Reference Costs 2012-2013. DH.
Unplanned admissions Sources	0.25 p.a. Based on emergency hospital admissions aged 50+ 2009/10 to 2011/12 for Worcestershire residents	1.3 Molloy et al. "Loneliness and Emergency and Planned Hospitalizations in a Community Sample of Older Adults." Journal of the American Geriatrics Society (2010).	£800 Conservative assumption of 50% of the average non-elective admission cost of c.£1,400 included in NHS Reference Costs 2012-13
Likelihood of residential care Sources	2% Calculation using NASCIS data S3 - Number of LA supported Permanent Admissions to residential care, nursing care and adult placements by the Worcestershire geography	3.25 Russell et al. "Loneliness and nursing home admission among rural older adults." Psychology and Aging (1997).	£45,000 for two years of care Based on Worcestershire cost of residential care (NASCIS)

Depression	20%	46%	£4,700 for 5 years of treatment
Sources	Matrix calculation based on Heikkinen et al, "Depressive symptoms in late life: a 10-year follow up" Finnish Research Center for Interdisciplinary Gerontology (2003)	Matrix calculation based on Heikkinen et al, "Depressive symptoms in late life: a 10-year follow up" Finnish Research Center for Interdisciplinary Gerontology (2003)	Matrix calculation based on NHS Reference Costs 2011-12
Dementia	7%	7%	£107,000 of treatment/care over 9 years
Sources	Matrix calculation based on Wilson et al, "Loneliness and risk of Alzheimer disease," Archives of General Psychiatry (2007)	Matrix calculation based on Wilson et al, "Loneliness and risk of Alzheimer disease," Archives of General Psychiatry (2007)	Matrix calculation based on NHS Reference Costs 2011-12
Physical inactivity	35%	60%	£72,000 of treatment/ care for increased onset of diabetes over 15 years, stroke over 3 years and CHD over 9 years
Sources	Matrix calculation based on Hawkey et al. "Loneliness predicts reduced physical activity: cross-sectional & longitudinal analysis," Health Psychology (2009)	Matrix calculation based on Hawkey et al. "Loneliness predicts reduced physical activity: cross-sectional & longitudinal analysis," Health Psychology (2009)	Matrix based on 2012 uplift of costs for diabetes, stroke and CHD published in NHS Reference Costs 2011-12

As the model required a number or ratio to describe the impact of loneliness, we quoted from single studies. Where possible these studies listed above are UK-based and recent, but several are from other countries and over ten years old.

SOURCES FOR EXPECTED INTERVENTION EFFECT

There are few UK-based studies that publish data on participants' loneliness scores pre and post intervention or as compared to a control group. Drawing on studies that used a 4-item version of the Revised UCLA scale, we found that a 0.78 point reduction per person would be an appropriate target for success.

A selection of studies presented in the paper entitled "A Meta-Analysis of Interventions to Reduce Loneliness" and their associated average point reduction in loneliness is below.

Study	Metric	Difference in mean loneliness scores (pts)
Promoting older adults' well-being through Internet training and use (2007)	20 item UCLA Loneliness Scale.	-9.68 (baseline: 42.56)
The effects of reminiscence therapy on psychological well-being, depression, and loneliness among the institutionalised aged (2009)	20 item UCLA Loneliness Scale.	-7.42 (baseline: 42.24)
Animal-Assisted Therapy and Loneliness in Nursing Homes: Use of Robotic versus Living Dogs (2008)	20 item UCLA Loneliness Scale.	-5 (baseline: 45.9)
Combating loneliness: A friendship enrichment programme for older women (2011)	11 item De Jong Giervald Scale	-2.70 (baseline: 7.0)
Stimulating friendship in later life: A strategy for reducing loneliness among older women (2010)	11 item De Jong Giervald Scale	-2.48 (baseline: 6.9)
Evaluation of a Community-based Health Promotion Program for the Elderly: Lessons from Seniors CAN (2006)	4 item UCLA Loneliness Scale.	-0.78 (baseline: 8.64)
An Evaluation of the Social Recreation Component of a Community Mental Health Program (2001)	4 item UCLA Loneliness Scale.	-0.35 (baseline 2.70)
Alleviating Loneliness among Frail Older People – Findings from a Randomised Controlled Trial (2008)	Do you feel yourself lonely?	-3% pts (baseline 28%)



ABOUT THE AUTHORS

LAUREN FULTON

Lauren joined Social Finance in November 2011. She has worked on Social Impact Bond development at the local authority level in the fields of rough sleeping and homelessness, children's services, and health and social care. She supported the development of the Greater London Authority's rough sleeping Social Impact Bonds (launched in 2012) and the performance management of the Essex County Council MST Social Impact Bond (launched in 2011). For the past two years, Lauren has focused on developing the Worcestershire Reconnections Social Impact Bond, which uses a new model of community support to address loneliness amongst older people. She holds an M.Phil in Politics from Cambridge University and a B.A. in Government from Harvard University.

BEN JUPP

Ben is a Director at Social Finance. He leads Social Finance's work on investment in health and social care, as well as supporting commissioners develop their full range of services.

Prior to joining Social Finance in 2011, Ben was Director of Public Services Strategy at the Cabinet Office. In that role Ben led work across Government to improve public services, such as through developing more personalised health and education services and shifting more transactional services on-line. In the civil service, he has also been Director of the Office of the Third Sector in the Cabinet Office, responsible for policy and support for the voluntary and community sector and social enterprises, and head of strategy at the Home Office.



Ben's previous experience includes leading research on welfare, health and regeneration policy at the think tank Demos and working in the NHS. He is a senior visiting fellow at the Nuffield Trust and involved in the management of a number of local public services.

ABOUT SOCIAL FINANCE

Social Finance is a not for profit organisation working in partnership with government, the social sector and the financial community to enable sustainable social impact at scale.

Since we began in 2007, Social Finance has mobilised over £62 million of social investment and designed a series of programmes to tackle social challenges. These include support for 2,000 short sentence offenders released from Peterborough Prison, 380 children on the edge of care in Essex, 2,500 disengaged teenagers, 600 homeless youth and 800 rough sleepers in London. We are also alleviating fuel poverty for over 2,300 families in Sunderland, enabling 15,000 families to access nursery places and free children's services, and providing 7,500 affordable micro loans in Wales.

We would welcome your comments and queries on this paper. Please email Reconnections@socialfinance.org.uk with your feedback.

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Social Finance Ltd

131-151 Great Titchfield Street
London, W1W 5BB
T +44 (0)20 7667 6370
info@socialfinance.org.uk
www.socialfinance.org.uk

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