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Updated Analysis for the Community Connectors programme incorporating data collected from May 2017 to December 2019

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1. Introduction and Executive Summary

Introduction

Loneliness is increasingly recognised as a public health issue and is considered comparable to obesity and smoking in terms of its detrimental impact on health. Social prescribing has had increased recognition within policy and research as a potential way of addressing loneliness and other psychosocial issues such as through the NHS Link Worker Scheme. However, there are currently gaps in evidence in relation to the impact of social prescribing, its suitability to address loneliness and interventions more generally to address loneliness. In light of this, the British Red Cross commissioned the University of Sheffield to evaluate the Community Connectors programme, which was developed by the British Red Cross and Co-op to address loneliness.

The Community Connectors programme is a national scheme but tailored to local areas which sought to provide service users with up to 12 weeks of support to help signpost them to community activities, which would help to address their loneliness. The Community Connectors programme is considered as an enhanced social prescribing service as it takes a holistic approach to referrals, offers support over a longer period than traditional social prescribing services and seeks to address loneliness rather than having a primary objective of decreasing health care utilisation.

In 2019, the University of Sheffield reported on a comprehensive evaluation of the Community Connectors programme. Following a further year of service delivery, the University of Sheffield was asked to repeat some elements of the evaluation with the larger sample of routinely collected data. The focus of the updated evaluation and this report is to analyse the routinely collected data to understand which service users are accessing the programme, the nature of support delivered and the impact of the programme on loneliness and wellbeing.

Logic model narrative

The data presented in the logic model (table 1) suggests:

- The Community Connectors programme has delivered the planned services
- The results indicate that the programme has led to a significant improvement of service users' loneliness and wellbeing
- Furthermore, aligning with the aims of provision such as the NHS Link Worker programme there is a trajectory of people being referred from statutory services to third sector organisations, indicating the programme is playing a role is supporting people to access potentially more appropriate support to meet their needs

Trigger group summaries

Table 2 provides a summary of the different trigger groups, including people not in a trigger group. There were differences in the amount of support received by people recorded as being in a trigger group compared to those who were not. Individuals not in a trigger group generally received less contacts and be less likely to receive signposting. However these people did still experience an improvement in loneliness from attending the programme. Further detail is included throughout the report.

Table 1: Logic Model and theory of change – following implementation and evaluation of British Red Cross Community Connectors Programme

Situation	Main aims of the intervention	Main aims of research/ evaluation	Inputs	Outputs		Outcomes- Impact Evaluation will assess extent to which the outcomes/impact are achieved	
The need: Prolonged experiences of loneliness are linked to serious mental and physical health conditions, with links to depression, dementia, high blood pressure, anxiety and other forms of mental ill-health A programme of Community Connectors with support from volunteers seek to develop services which provide practical and emotional support to people who are, or at risk of loneliness Service users are provided up to 12 weeks' person centred practical and emotional support, tailored to their	**List up to 5 main aims** 1.To increase knowledge of and access to a range of community and universal services for service users 2. To recruit volunteers to provide services and information which will increase uptake in local community activities 3. To improve self-esteem, confidence, health related quality of life among service users 4. To reduce loneliness among service users	**Main evaluation aims** 1. Measure how the service impacts on levels of social isolation and loneliness in service users 2. Understand how the service supports different trigger groups 3.Capture the experiences of services users, staff, and volunteers 4. Measure any reductions in use of acute, secondary and community care occurring as a consequence of the support to service users	**What is invested** Paid staff (Community Connectors) are recruited, trained and based in local communities (about 90% of service users receive support only from Connectors) Volunteers are recruited, trained and based in local communities (Around 10% of service used receive Collaborators and partners refer to the service (primarily NHS and local authorities) Signposting to other organisations (2/3 are third sector organisations)	**Activities/methods (What is done):** Support plans and goals are co-created with service users (initial review after 6 weeks against goals) Service users are provided with emotional support (felt listened to) Service users are provided with practical support Service users are provided with information on available community services/activities, resources, events Community members are connected to existing services and	**Participation Who is reached:** **2/3 female** Mean age was 65.5 years 70.2% White British 84.9% considered lonely based on UCLA (6-9 being lonely) Lower levels of wellbeing than the UK population 59.3% belonged to a trigger group. This included: 49.3% experience a health issue	**Short-Term results (listed for those reached by measure)** Personalised, tailored support packages developed Service users have increased social connections through Community Connectors and volunteers visiting their homes Service users have increased social connections through access	**Long-Term results (by measure)** Decreased loneliness in UCLA scores from services users from baseline to end of programme of 1.84 with 72.6% of service users experiencing an improvement in their loneliness Significant reduction in loneliness from being lonely to not lonely at end of programme (84.9% at baseline to 47.5% at end of programme)

specific needs, with the aim of achieving longer term goals beyond the intervention by (re) connecting with their community	5. To prevent the potential need for service users to be dependent on longer term clinical support	5. Capture learning about what works, where and why 6. Understand the broad costs of service delivery and make judgements on financial and social returns for the investment (in progress) 7. Provide evidence to inform decision making about wider rollout and support advocacy	Up to 12 weeks support planned with an average of four contacts (telephone and face to face) and 75% have no more than 9 contacts) Additional support (not direct contact i.e. speaking to family member or referral organisations) Time taken for Community Connector to build the network of recruiters, organisations and volunteers Programme costs (centralised and local administrative costs, set up costs and running)	resources (e.g. social networks, community engagement groups) Supporting organisations process and accept referrals in and out of the programme	24.% mobility limitations 2% Divorced/separated 7.8% Recently bereaved 10.3% Living without children/retirees 0.9% Young Parents	to local groups and activities Increased signposting to BRC services and therefore more appropriate use of BRC services (10% of referrals and signposted to/from the BRC) Greater self-esteem and confidence identified among service users Enjoyment of the contact by services users Volunteers gain a sense of satisfaction and motivation Volunteers experience increased social	Most lonely - higher levels of improvement (although likely due to having more scope to improve) Improved well-being of service users (evidence SWEMBS) Increased social connections of service users are sustained (% from qualitative) Over dependence on Volunteer/Community Connector (unintended negative consequence) Volunteers gained experience of increased employability Costs of service/value for money/cost

| | | | | | | connections with service users and other volunteers

People feel they can go back to the service if they need to once they have left

Service users accompanied to medical/health appointments (5% of recorded journeys were to support medical appointments)

Provided with wider practical support i.e. get people assessed for specific mobility items of equipment

People signposted to other organisations and there is a trajectory of | effectiveness/SRO I (see separate SROI document)

Some very limited evidence from the qualitative analyses that there is a reduction in use of acute, secondary and community care |

						being referred from statutory services to being signposted to third sector organisations	

Table 2: Summary document detailing differences between the 6 trigger groups and for service users with no trigger group recorded

	Living without children at home/retirees	Recently bereaved	Recently divorced or separated	Experiencing health issues	Mobility limitations	Young parents	No trigger group category
How they were referred	Almost half (45.1%) were referred by statutory health and care services (Based on 1100 people with data) This is a higher proportion than other trigger groups.	37.4% were referred by statutory health and care services (Based on 829 people with data) This is similar to service users not in the trigger group.	40.5% were referred by statutory health and care services (Based on 217 people with data) This is similar to service users not in the trigger group.	Almost half (47.5%) were referred by statutory health and care services (Based on 5242 people with data) This a higher proportion than other trigger groups.	Almost half (46.5%) referred by statutory health and care services (Based on 2564 people with data) This is a higher proportion than other trigger groups.	Over three quarters were self-referrals (77.6%- Based on 98 people with data) A much smaller proportion were referred by statutory health and care services compared to other service users.	Majority were referred by statutory health and care services (55.3% based on 4336) This is a much higher proportion than service users who were categorised as being in trigger groups.
Living arrangements	79.4% of service users live alone (Based on 904 people with data) This is a considerably higher proportion than service users generally (65.4%)	80.2% of service users live alone (Based on 571 people with data) This is a considerably higher proportion than service users generally (65.4%).	63.5% of people live alone (based on 167 individual). This is fairly consistent with the overall sample.	63.6% of service users lived alone (Based on 4270 people with data) This is fairly consistent with the overall sample.	65.3% of service users lived alone (Based 2082 people with data) This is consistent with the overall sample.	23.3% of Young Parents lived with family/friends whilst 61.6% lived alone (Based on 73 people with data). This is somewhat	Very similar to the participants classified in a trigger group. Just under two thirds of service users (65%) were living alone (Based on 1994 people with data)

						difference to other groups	
Gender	Two thirds of service users were female (66.5%) (Based on 1014 people with data). This is consistent with the overall sample.	Two third of service users were female (66.7%) (Based on 670 people with data). This is consistent with the overall sample.	Two thirds of service users were female (66.5%) (Based on sample of 197) This is consistent with the overall sample.	Just under two thirds of service users were female (64.8%) (Based on sample of 4872). This is fairly consistent with the overall sample.	Just over two-thirds of service users were likely to be female (67.3%) (Based on sample of 2378). This is fairly consistent with the overall sample.	Almost all young parents were female (96.7%) (Based on sample of 88). Service users being predominately female is unique to this specific trigger group (but understandable given the trigger group).	Very similar to the participants classified in a trigger group. Two thirds were female (64%) (Based on a sample of 2472).
Age	69.6% were over 60 years' old (Based on 948 people with data) This is slightly greater than the overall sample.	Over three quarters of service users were over 60- 77.6% (Based on 584 people with data) This is over 10% more than the rest of the sample.	60.6% were under 60 years old (Based on 160 people with data). The average age was 56.5 years compared to 65 in the rest of the sample. People recently divorced/separately were on average younger than the rest of the sample.	Nearly two-thirds (63.6%) were over 60 years' old (Based on 4465 people with data) This Is consistent with the rest of the sample.	Over three quarters of service users (76.4%) were over 60 (Based on 2225 people with data) People with mobility issues were generally older than other service users.	The average age of young parents was 21.3 years (Based on a sample of 18). This trigger group was considerably younger than the other trigger groups.	Very similar to service users classified in a trigger group. About two-thirds (61.2%) were over 60 (Based on 1895 people with data)
Ethnicity	Over 75% of service users were white British (77%) (Based on	Three quarters (75.9%) were white British	Two-thirds were White British (65.8%) (Based on 161 people with data)	70.8% were white British (Based on 4082 people with data)	71.55 were White British) (Based on 1991 people with data)	Half of Young New Parents were White British (67.4%)	Ethnic background very similar to participants

	840 people with data) This is a little higher than the overall sample of 70%.	(Based on 532 people with data) This is a little higher than the overall sample of 70%	This is a smaller proportion than the overall sample.	This is consistent with the overall sample.	This is consistent with the overall sample.	Based on 46 people with data). Of note were higher rates than expected of service users of Black African White Other ethnicities. This trigger group appeared more ethnically diverse than other trigger groups.	classified in a trigger group. Over two thirds of people classed as White British- 67.3% (Based on 1724 people with data).
How they were supported	41.4% were signposted (Based on 978 people with data). This is slightly higher than the rate of signposting generally.	47.9% were signposted (Based on 606 people with data). This is considerably higher than the overall sample.	Almost half of service users were signposted (48.2% (Based on 199 people with data). This is considerably higher than the overall sample.	43.8% of service users were signposted (Based on people with 4432) This is considerably higher than the overall sample.	46% of people were signposted (Based on 2261 people with data). This is considerably higher than the overall sample.	17.5% of young parents were signposted (Based on 75 people with data). This is lower than the overall sample.	People not in a trigger group appear to be less likely to be signposted. Just under a quarter were signposted (24.4%). This is over 10% lower than people in trigger groups (Based on 1632 people with data)

Intensity of support provided	Average contacts was 9.0 while the average support in minutes was 523.75 (Based on 978 people with data)	Average contacts was 9.4 while the average support in minutes was 505.03 (Based on 606 people with data)	Average telephone contacts was 8.9 while the average support in minutes was 508.9 (Based on 199 people with data)	Average contacts was 9.4 while the average support in minutes was 436.11 (Based on 4432 people with data)	Average contacts was 8.76 while the average support in minutes was 497.18 (Based on 2261 people with data)	Average contacts was 5.68 whilst the average support in minutes was 338.81 (Based on 75 people with data) This is a lower amount of support than the other trigger groups.	Average contacts was 4.15 whilst the average support in minutes was 227.22 minutes (Based on 1632 people with data) People not in a trigger group appear to receive a lower amount of support than the other trigger groups.
Difference the service made	There was a large reduction in loneliness- 88% were lonely at the start of support and this decreased to 46.3% at the end of support (Based on 460 people with data)	Reduction in loneliness was less than in other trigger groups-- 88.8% were lonely at the start of support and this decreased to 56.5% at the end of support (Based on 276 people with data)	There was a large reduction in loneliness- 88.1% were lonely at the start of support and this decreased to 44.6% at the end of support (Based on 101 people with data).	There was a large reduction in loneliness 84.8% were lonely at the start of support and this decreased to 49.1% at the end of support (Based on 1715 people with data)	There was a large reduction in loneliness- 81.6% were lonely at the start of support and this decreased to 48.5% at the end of support (Based on 970 people with data)	There was a large reduction in loneliness- 90% were lonely at the start of support and this decreased to 40% at the end of support (Based on 10 people with data).	Very similar to the participants classified within a trigger group- (80.6%) were lonely at start of support and this decreased to 42.7% at the end of support (Based on 232 people with data).

What differences were made in terms of wellbeing	56.3% experienced an improvement in their wellbeing at the end of the support (Based on 16 people with wellbeing data). This is much lower than other service users.	69.2% experienced an improvement in their wellbeing at the end of the support (Based on 13 people with wellbeing data) This is a little lower than other service users	All (100%) improved their wellbeing at the end of the support (Based on 4 people with wellbeing data) This is much higher than other service users.	76% experienced improvement in their wellbeing at the end of the support (Based on 75 people with wellbeing data) This is similar to other service users.	68.9% experienced improvement in their wellbeing at the end of the support (Based on 45 people with wellbeing data) This is similar to other service users.	No new parents had completed wellbeing data.	50% experienced an improvement in their wellbeing (Based on 4 people with wellbeing data). This is much lower than other trigger groups.

Summary of the findings and implications

The findings were generally consistent with those from the April 2019 evaluation report and many of the recommendations remain relevant. Consequently within the report, rather than reporting the findings in depth we have referenced the previous report where appropriate.

The key findings of the study are:

Accessing the service
- There were 10643 referrals to the Community Connectors programme between May 2017 to December 2019
- Two thirds of service users were female, with an average (median) age of 65.5 years and the majority were White British
- Almost 60% of service users were recorded as belonging to a trigger group- with Individuals with health issues (49.3%) and Individuals with mobility issues (24.1%)

Nature of support
- Of the people who received support, the average number of contacts was 4, with the majority of people having 9 or less contacts and 7.5 hours or less of support
- 34.7% of service users were signposted- the main source was to support delivered by the third sector

Impact of the service
- Almost three quarters of people experienced an improvement in their loneliness and this improvement was greater than the general population. Furthermore there was a considerable reduction in the proportion of people feeling lonely
- It appears important for service users to receive at least 2 face-to-face appointments, as this appears related to improvements in loneliness. However, the precise number of appointments should be shaped by the needs of the individual
- Over three quarters of people experienced an improvement in their wellbeing when accessing support

Implications for the British Red Cross

- **Issues with quality of data-** There are issues with data recording and it is recommended that British Red Cross need to revisit the data systems to ensure Community Connectors are receiving sufficient support with data recording, especially in relation to Young Parents (see the next point)
- **Prioritising data collection for service users recorded as Young Parents-** There was some evidence that individuals who were recorded as being in the Young Parents group were receiving less support but also more likely to experience an improvement in their loneliness. However, there are reliability issues with the Young Parent group with people over the age of 24 being recorded as Young Parents. It is suggested that British Red Cross prioritise

monitoring for people considered to be Young Parents including recoding date of birth and collecting UCLA data. This would enable some specific analysis on the Young Parents group and is important as they have traditionally not been the target of interventions for addressing loneliness

- **Referrals not receiving support-** There are about a quarter of service users who are not recorded as receiving any telephone or face-to-face support which raises questions about what is happening to these service users. The British Red Cross need to consider how to address this issue, for example, creating a central system to flag up accepted referrals who do not have support received within two months of the referral so that Connectors can prioritise these users

- **Ensuring service users receive at least 2 face-to-face appointments-** Service users who receive at least two face-to-face appointments experienced a greater improvement in loneliness than service users who received telephone only support or people who received just one face-to-face appointment. Given this, it is recommended that Connectors continue to tailor their support to individual service users including trying to encourage people to have at least two face-to-face appointments

- **Managing service users who require a greater amount of support-** There were a small proportion of service users who required over 20 contacts. Whilst these numbers were small, they did experience a greater improvement. Although it is appreciated that a greater level of support is not the remit of the Community Connectors programme, given the finding of the previous report was some service users wanted greater support, the British Red Cross may wish to consider whether there is scope to offer a longer service to some individuals, in accordance with the organisation's ethos of seeking to deliver person centred care

- **Targeting service users in the trigger groups-** It appears there are differences in how the programme is being delivered to individuals not recorded as being in a trigger group compared with those that are recorded as being in a trigger group (for example, signposting rates are lower). It raises questions about whether the programme is more suited to individuals from the trigger groups and the implications of this such as targeting referrals

- **Meeting a gap in service provision-** It appears the programme is filling a gap for statutory service provision as a third of referrals were from the NHS and local authorities. Alongside, the British Red Cross provided people with journey support to attend appointments and to support discharge from hospital. The support the programme is providing to the statutory service is something the British Red Cross may want to emphasise if seeking future funding for the programme

Implications for the sector

- **Young Parents appear to be benefitting from the support-** This is an important finding because often schemes addressing loneliness have been targeted at older people. It is recommended that greater focus is given to supporting young parents with addressing loneliness and existing schemes may want to develop networks with potential referrers such as Health Visitors

- **Trajectory of shifting support from the statutory service to the third sector-** The trajectory of service users being referred by the statutory service

but being signposted to the third sector indicates how schemes like the Community Connectors programme have an important place within health and social care systems

- **Need for paid, skilled front-line workers to deliver the service-** The Community Connectors service model had anticipated that volunteers would play a significant role in delivering support to service users, partly because of the peer support benefits, but also because of capacity and cost reasons. However, less than 10% of support was delivered by volunteers and raises questions about the feasibility of the model. It is recommended that further research is undertaken on how volunteers have been used successfully within similar projects and the different functions volunteers and paid front-line workers can play within a scheme. For example, paid workers may be responsible for delivering 1-1 support but volunteers could be utilised to set up group activities

- **Tailoring support to meet individual service user needs-** The British Red Cross gave Connectors scope to deliver support to meet the needs of individual service users. With the nature of appointments, length, number, location and type of contact varying depending on a persons' needs. Having person-centred support tailored to an individual's needs appears to be a strength of the programme and it is recommended other services replicate this

- **Making longer-term changes to peoples' support**- Many service users did not manage to maintain improvements in their loneliness once they finished in the Community Connectors service, and this includes people who were signposted. Further research is needed within the sector about how best to support people to maintain improvements after finishing in social prescribing type services. This is especially important given they are currently being rolled out nationally via the NHS Link Worker contract. It also raises questions whether shorter-term interventions are appropriate for supporting people to experience improvement in their loneliness longer term. Again this needs further investigation

Conclusions

The Community Connectors programme is a valuable source of support for people experiencing loneliness. It appears to be filling a gap in local health and social care provision, with statutory services being the key source of referrals. The service is being tailored to meet peoples' needs and almost three quarters of people experienced an improvement in their loneliness and over three quarters improved in their wellbeing.

Many of the findings reflect those detailed in the 12th April report, but there are some differences especially in terms of statistically significant findings. **As this analysis is based on a larger sample, where the statistics differ then the findings of this report should supersede those of the April 2019 report.** However, service users struggled to maintain improvement in their loneliness and there is a need for services to address this, especially as being signposted does not appear to help sustain improvements in loneliness.

2. The delivery of the Community Connectors Programme

Introduction

This section focuses on describing the types of people accessing the Community Connectors programme and the nature of the support they received. The work presented in this section and section 3 is based on the analysis of data collected routinely by the Community Connectors including individual service user details, support delivered and changes in outcomes measured by standardised Patient Reported Outcome Measures. The database was based on a dataset consisting of 10,643 service users and covers the period of May 2017 to December 2019. As with any routinely collected data, there were issues with missing data so each part of the analysis is based on differing numbers of service users.

Demographics

Generally, it was found that service users' demographics were consistent with the findings of the April 2019 report. Table 3 illustrates the demographics in detail, but to summarise:

- 65.8% (n= 5388) of service users were female compared to 34.2% (n=2802) male
- The average (mean) age of service users is 65.5 years (95% CI 65.04-65.94). Just over a fifth of service users were under 50 years old (19.5%, n=1367)
- Almost two thirds of people lived alone (65.4%, n=4573). Similar proportions of service users reported living with a spouse/partner, family and friends or in supported accommodation as in the previous report
- The majority of service users were White British (70.2%, n=4491). Other service users came from a range of ethnicities

Table 3: Demographic profile of the Community Connectors service users

Area of residence	N	%
North	1963	18.4
London	1575	14.8
South East	963	9.0
Central	428	4.0
South and The Channel Islands	1307	12.3
Scotland	1908	17.9
Wales	737	6.9
Northern Ireland and the Isle of Man	1762	16.6
Total	**10643**	**99.9**
Gender		
Male	2802	34.2
Female	5388	65.8
Gender Fluid	1	0.0
Total	**8191**	**100.0**
Ethnicity		

White British	4491	70.2
White Irish	162	2.5
White Scottish	225	3.5
White Welsh	64	1.0
White other	261	4.1
Back African	175	2.7
Black Caribbean	196	3.1
Black other	72	1.1
Asian Pakistani	101	1.6
Asian Indian	80	1.3
Asian Bangladesh	52	0.8
Asian Chinese	10	0.2
Asian Other	89	1.4
Arab	31	0.5
Mixed background	13	0.2
Other ethnic group	125	2.0
Total	**6398**	**100.2**
Age Category		
<30	398	5.7
30-39	460	6.6
40-49	602	8.6
50-59	1051	15.0
60-69	1107	15.8
70-79	1328	19.0
80-89	1496	21.4
90-99	552	7.9
100+	8	0.1
Average (Mean) age	65.5	19.3
Total	**7002**	**100.1**
Living arrangements		
Living Alone	4573	65.4
Living with family/friends	1194	17.1
Living with spouse/partner	739	10.6
Nursing/care home	117	1.7
Sheltered Accommodation	365	5.2
Total	**6988**	**100.0**
Assessment Status		
Accepted for support	9392	88.2
Declined	912	8.6
Pending	70	0.7
Failed Referral	269	2.5
Total	**10643**	**100.0**

Note: The total for each demographic varies as each one had differing levels of missing data.

Trigger Groups

Over half of service users were recorded as belonging to a trigger group (59.3%, n=6306 of 10643). Almost half of service users were recorded as having a health condition (49.3%, n=5242) and almost a quarter were recorded as having mobility limitations (24.1%, n=2564). All but the health condition trigger groups had similar proportions as previously reported (within 1%). Furthermore, the relative proportions of trigger groups was consistent. Amongst the sample, 31.6% were recorded as belonging to one trigger group (n=3361). Just over a fifth belonged to two trigger groups (n=2231). The majority of remaining service users were recorded as belonging to 3 or 4 trigger groups, with only 4 service users recorded as belonging to 5 groups.

98 service users were recorded as Young Parents however there is considerable concerns about the reliability of the variable. Many people were miscoded to this group as they were aged over 24 years old. Corrections have been made, with anyone aged over 24 being classed as not belonging to the Young Parents trigger group. However, this corrective action could not be taken for service users without age recorded. Thus, it is likely that there are individuals recorded as Young Parents who do not meet the British Red Cross's criteria. Therefore, any statistics relating to Young Parents should be treated with caution.

Table 4: Number of service users belonging to each trigger group

Type of trigger group	Number	Percentage of the total of service users
Individuals with health issues	5242	49.3
Individuals with mobility limitations	2564	24.1
Individuals living without children at home/ recently retired	1100	10.3
Individuals recently bereaved	829	7.8
Individuals recently divorced or separated	217	2.0
Young new parents	98	0.9
No trigger group recorded	4337	40.7

*Please note this table is equates to more than 100% as is about the proportion of people compared to all service users belonging to a trigger group and individuals can belong to more than one trigger group. No total has been included because would not equate to the total number of service users.

Summary details on the demographics of service users within each trigger group is provided within table 2 (above).

Schemes people accessed

Table 5: Number of service users by scheme

Area	Scheme	Scheme status	N	Percent
Central	Boston Community Connector	Closed	21	0.2
Central	Corby Community Connector	Closed	113	1.1
Central	Great Yarmouth Community Connector	Closed	33	0.3
Central	Nottingham Community Connector	Co-op funded	261	2.5
London	Barking & Dagenham Community Connector	BRC	313	2.9
London	Brixton Community Connector	BRC	206	1.9
London	Golborne Community Connector	BRC	270	2.5
London	Holloway Community Connector	BRC	251	2.4
London	New Cross Community Connector	Co-op funded	408	3.8
London	Stonebridge & Harlesden Community Connector	Closed	127	1.2
North	Blackpool Community Connector	BRC	132	1.2
North	Blyth Community Connector	BRC	288	2.7
North	Durham Community Connector	Closed	252	2.4
North	Middlesbrough Community Connector	Closed	162	1.5
North	Newcastle Community Connector	Co-op funded	534	5.0
North	Oldham Community Connector	BRC	219	2.1
North	Stockport Community Connector	Co-op funded	245	2.3
North	York Community Connector	Closed	131	1.2

Area	Scheme	Scheme status	N	Percent
Northern Ireland & The Isle of Man	Douglas Community Connector	Co-op funded	759	7.1
Northern Ireland & The Isle of Man	North Belfast Community Connector	Co-op funded	492	4.6
Northern Ireland & The Isle of Man	West Belfast Community Connector	Co-op funded	511	4.8
Scotland	Aberdeen Community Connector	BRC	155	1.5
Scotland	Dundee Community Connector	Co-op funded	497	4.7
Scotland	Fife Community Connector	Co-op funded	731	6.9
Scotland	Inverness Community Connector	Closed	244	2.3
Scotland	Shetland Community Connector	BRC	281	2.6
South & The Channel Islands	Camborne & Redruth Community Connector	BRC	272	2.6
South & The Channel Islands	Plymouth Community Connector	BRC	351	3.3
South & The Channel Islands	Poole Community Connector	Co-op funded	577	5.4
South & The Channel Islands	Reading Community Connector	Closed	107	1.0
South East	Luton Community Connector	BRC	361	3.4
South East	Southampton Community Connector	Co-op funded	369	3.5

Area	Scheme	Scheme status	N	Percent
South East	Thanet Community Connector	Closed	233	2.2
Wales	Carmarthenshire Community Connector	Closed	121	1.1
Wales	Conwy Community Connector	Closed	280	2.6
Wales	Newport Community Connector	Closed	114	1.1
Wales	Torfaen Community Connector	Closed	222	2.1
Total	N/A		10,643	100.0

10,643 people have been referred to the programme and numbers of referrals are greater in 2019 than previous years, which indicates that awareness of the programme has grown and there is a continuing pool of people who are experiencing loneliness who could be supported through the Community Connectors programme. Up until the summer of 2019 there had been 37 schemes in operation, with some closing in July 2019. The range of service users per scheme varied from 21 to 759 (table 5). The average number of service users per scheme has not been calculated because the level of resources within the schemes varied and there may be additional issues which have influenced capacity. As a whole, the number of referrals has almost doubled in a year - 10,643 up to December 2019 compared to 5,787 referrals by the end of December 2018 (an increase of 83.9% in a year).

Sources of referral

Table 6: Primary source of referrals

	Number (n=10,643)	Percentage
Statutory services (Local authority, NHS, National Government)	3880	36.5
Self-referral	3792	35.6
Third/Charity organisations	1184	11.1
British Red Cross	1139	10.7
Family and friends	192	1.8
Private sector	208	2.0
Others	208	2.0
Unknown source	40	0.3
Total	**10643**	**100.0**

Over a third of referrals are from the statutory services, which indicates that the Community Connector programme is filling a gap in service provision. Furthermore, the number of self-referrals highlights that the British Red Cross are effectively raising awareness of the programme.

Having 10% of referrals from other BRC services indicates that the programme is also fulfilling a need internally. Similar proportions of service users were referred to the Community Connectors programme through statutory services such as the NHS (36.4%, n=3880) and via self-referral (35.6%, n=3792). The third sector and other British Red Cross services were also both common sources, making just over 10% of referrals each.

Table 7: Secondary sources of referral

Primary Code	Secondary source of referral	Number (n=10,643)	Percentage
Self-Referral	Self-Referral	3,792	35.6
Local Authority	Local Authority - Age Specific	3	0.0
	Local Authority – Fire	4	0.0
	Local Authority – Housing	199	1.9
	Local Authority - Learning and Education	39	0.4
	Local Authority - Leisure, Fitness and Physical Activity	7	0.1
	Local Authority - Mental Health	7	0.1
	Local Authority – Other	105	1.0
	Local Authority – Police	26	0.2
	Local Authority - Single Point of Access	58	0.5
	Local Authority - Social care	293	2.8
	Local Authority - Social Services	815	7.7
	Local Authority – Unknown	17	0.2
	Local Authority – Wellbeing	135	1.3
	Total	**1708**	**16.2**
NHS	NHS - Community Health	518	4.9
	NHS – GP	474	4.5
	NHS – Hospital	501	4.7
	NHS - Mental Health	478	4.5
	NHS – Other	74	0.7
	NHS – Unknown	102	1.0
	Total	**2147**	**20.2**
	Third sector - Age specific	320	3.0

Primary Code	Secondary source of referral	Number (n=10,643)	Percentage
Third Sector	Third Sector - Advice & Advocacy	105	1.0
	Third Sector - Bereavement Support	15	0.1
	Third Sector - Disability Support	44	0.4
	Third Sector - Ethnicity Specific	3	0.0
	Third Sector - Family Support	31	0.3
	Third Sector - Gender Specific	6	0.1
	Third Sector - Hobbies/Interests/Social/Cultural	24	0.2
	Third Sector - Housing/Homelessness	94	0.9
	Third Sector - Mental Health Condition	184	1.7
	Third Sector – Other	178	1.7
	Third Sector - Physical Health Condition	91	0.9
	Third Sector – Religious	7	0.1
	Third Sector - Transport and Mobility	1	0.0
	Third Sector – Unknown	1	0.0
	Third Sector - Volunteering and Community Action	80	0.8
	Total	**1184**	**11.1**
Others	Other	3	0.1
	Other - Integrated Care Partnership	205	1.9
	Total	**208**	**2.0**
BRC	British Red Cross	1,139	10.7
Family and Friends	Family and Friends	192	1.8
Unknown source	Unknown	40	0.3

Primary Code	Secondary source of referral	Number (n=10,643)	Percentage
Private Sector	Private Sector - Health and Wellbeing	22	0.2
	Private Sector – Other	98	0.9
	Private Sector - Personal and Physical Health Care	88	0.8
	Total	**208**	**2.0**
National Government	National Government - Benefits and Welfare	16	0.2
	National Government – Other	9	0.1
	Total	**25**	**0.2**

*Please note the percentage may be incorrect to one or two decimal points because of rounding up/down such a large number of categories to one decimal place.

As can be seen in table 7, referrals came from a range of sources. The most common was the Local Authority in terms of social care and social services (10.5% n=1208). Within the NHS, different types of services made similar levels of referrals. For example, community health, GP, mental health and hospitals were all making approximately 5% each of referrals. Within the third sector, the most common source of referral were age specific organisations such as Age UK (3% n=320). Notably, an important sources of referrals was the British Red Cross themselves (10.7, n=1139), highlighting that the Community Connectors programme is fulfilling a need within the organisation for current service users.

Proportions of service users accepted for support
As in the April 2019 report, approximately 90% of referrals were accepted for support (88.2%, n=9392). A small percentage of people declined the service (8.6%, n=912). Pending referrals made up 0.7% of service users (n=70). There was also a small number of failed referrals (2.5%, n=269). There are two explanations for the high number of referrals being accepted. Firstly, it appears the programme is being promoted in appropriate ways which is encouraging suitable referrals. It also indicates that Connectors are seeking to support whoever they feel needs support. This links into the qualitative findings of the April 2019 report that Connectors feel as members of the British Red Cross, they want to help anyone in need.

Nature of support provided
For the analysis of service delivery, a subset of service users who had been accepted into the service, and had no recorded contact since 30/11/2019, was created. This sub sample consisted of 9,253 service users. The reasons for the date cut off was to try and only include service users whose had completed in the programme to ensure that we were analysing their full package of support.

Figure 1: Type of support service users received (n=9,253)
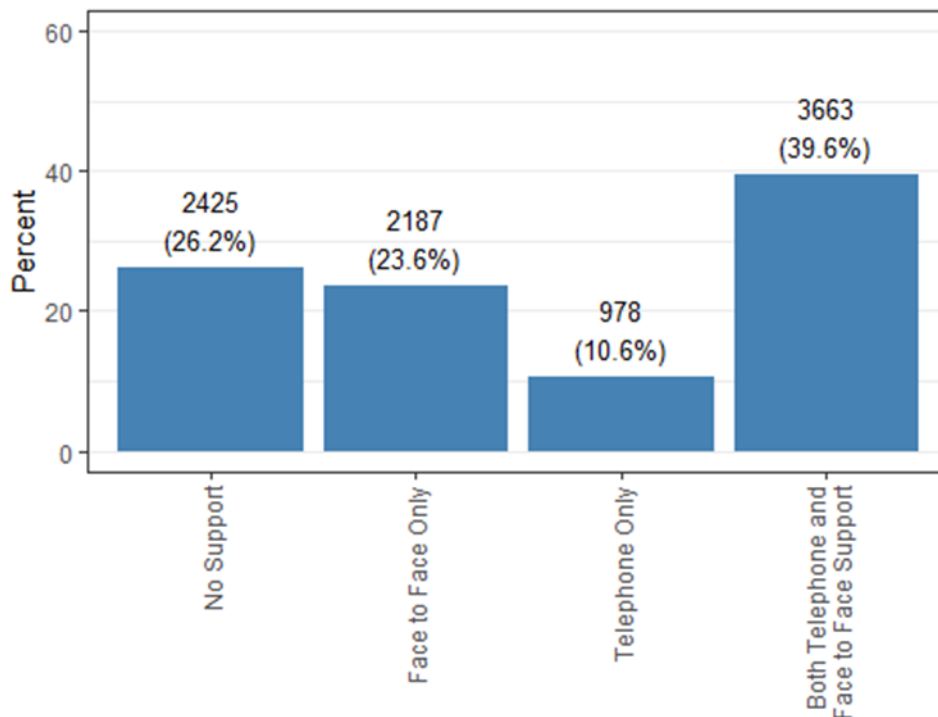
Almost three quarters of service users were recorded as receiving support be it via telephone or face-to-face. Approximately 40% of service users received a combination of telephone and face-to-face support (39.6% n=3663). Some service users received purely face-to-face support (23.6%, n=2187) and a small proportion received telephone support only (10.6% n= 978). There was a greater proportion of service users who had received some support than previously reported. The proportion of people not recorded as receiving any support had reduced by almost 10%, with just over a quarter of service users now not receiving support (26.2%, n=2425). It is not known why these service users did not receive any support but it may be explained by a lack of data keeping, some will still be awaiting support and some where it was not possible to make contact with the service user. However, this needs further exploration by the organisation to ensure potent service users are not missing out on support they need.

For the remainder of the analysis on the nature of support, the sample is based on the 6,828 service users who received at least one telephone or face-to-face appointment, were accepted for support and has not received support since 30/11/2019.

Length of support
Service users were involved in the Community Connectors programme for varying lengths of time ranging from 1 day to 125 weeks. The average (median) length of support received by service users was 6 weeks (43 days). Three-quarters of service-users received support for between 1-14

weeks. Just under a quarter of services users received one appointment (23%, n=1571). At the other end of the spectrum, 8.9% (n=607) of service users received over 24 weeks of support. Just over a quarter of people received 4-12 weeks of support, reflecting the service specification (26.4%, n=1802).

Figure 2: Length of support (n=6,828)
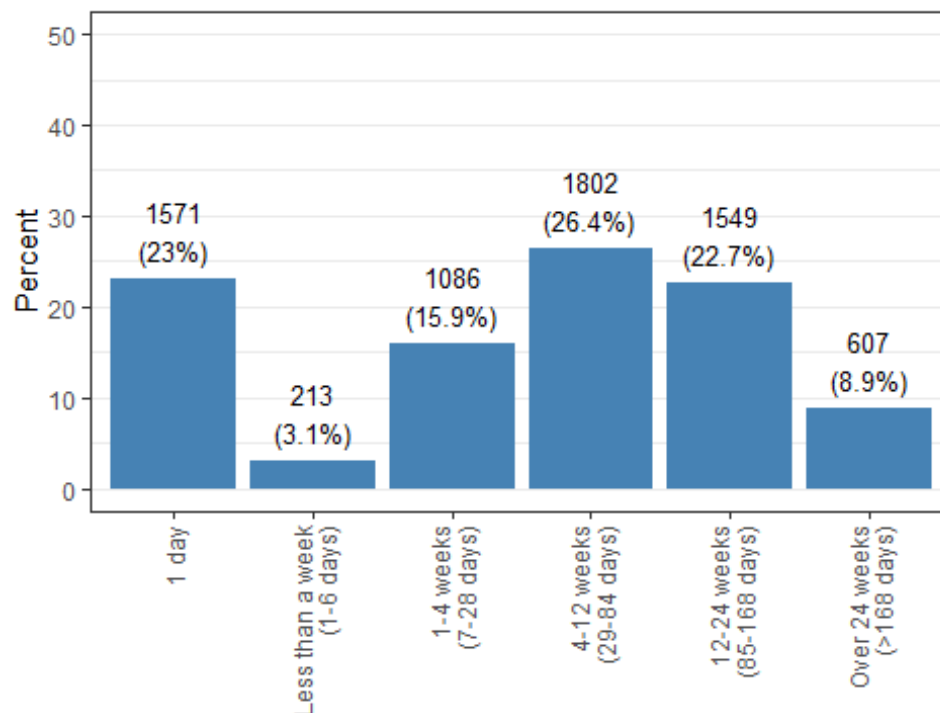
Support delivered by telephone

On average, service users received 3 telephone calls, which generally tended to be a short check in type call delivered by Connectors. As in the April 2019 report, 68% of service users received at least one telephone call of support (n=4641 of 6828) with the average number of calls being 3. Three quarters of service users receiving between 1 and 6 calls. A quarter of service users received one telephone call (27.3%, n=1265). At the other end of the spectrum, 2% of service users received over 20 telephone calls each (n=87).

Three quarters of telephone calls were 10 minutes duration or less, with the average being 5 minutes. Some telephone calls were longer, such as one lasting 6 hours but these longer calls were the exception. As in the April 2019 report, three quarters of service users received less than 45 minutes support in total, with a small proportion of service users having greater support delivered by telephone. Furthermore, over 90% of service users had their telephone support delivered purely by Connectors (93.5%, n=4339). This has implications for service planning as it indicates that telephone support is a task undertaken by Connectors.

The data on non-service user calls was consistent with the April 2019 report. It appears non-service user calls are being tailored to meet the individual needs of each service user and highlight how part of the

Community Connector programme is providing support indirectly by speaking to other parties about an individual's care. Telephone calls about the service user to another party was recorded for just under a third of people (30.3%, n=2070). The average (mean) number of calls was 2 and 75% of service users had 4 or less calls and these were generally shorter than 15 minutes long. There were less than 20 service users who had over 20 calls made about them. Furthermore, there was a small number of calls which lasted a longer period of time such as when speaking to the Department for Work and Pensions.

Face-to-face appointments

There was variation in the number of face-to-face appointments people received and the length of individual appointments, highlighting the importance of the programme being tailored to meet the needs of each person, Similar to the April 2019 report, 85.7% (n=5850) service users received at least one face-to-face appointment. The average (median) number of face-to-face appointments was 3, with 75% of service users receiving 6 or less appointments. This was less than the 12 weeks of support initially planned within the service specification.

A third of service users received one appointment (34.8%, n=2036). It is not known whether this was because one appointment was sufficient to meet their needs or because the service user did not feel the programme met their needs. Less than 100 service users received more than 20 face-to-face appointments (1.4%, n=92) indicating that whilst some people required a larger amount of support, this was a small sub set of people. However, it raises questions about how to manage people who require a greater amount of support and whether they are receiving this to the detriment of other service users.

The average length of the face-to-face appointments was 90 minutes, with 75% of face-to-face appointments being less than 2 hours long. On average, service users received a total of 3.5 hours of face-to-face support and. 75% of service users received less than 6.5 hours of face-to-face support.

Location of appointments

It appears important to encourage appointments outside of the home because service users who did were more likely to experience an improvement in loneliness. The number of appointments outside of the home has increased since the April 2019 report. Over half of service users received support outside of the home (n= 3144, 53.7%). However, there were differences between trigger groups, with some groups more likely to only receive appointments at home. As one may expect, Individuals with Health conditions (49.9%, n=1905 p=<.001) as well as Individuals with Mobility issues (53.6%, n=1072, p=<.001) were less likely to receive support outside of the home. However people Living without children at home/Recently retired (51.2%, n=462, p=.001) and Individuals recently bereaved (51.1%, n=27, p=.011) were also less likely to have appointments outside of the home. British Red Cross may want to consider why these trigger groups are less likely to receive appointments outside of the home. However Young Parents (16.9%,

n=12, *p*=<.001) and Individuals not in a trigger group (39.4%, n=533, *p*=<.001) were less likely to have had home only appointments. Furthermore there is a statistically significant difference between age groups. Amongst Over 60s, 70.6% (n=1672 of 2874) had appointments only at home compared to 54.9% (n=696 of 1685) of Under 60s (*p*=<.001).

Amongst the group of home only appointments, 62.8% had an improvement in their loneliness score (n=538) compared to 79.1% (n=1000) amongst service users who had at least one appointment outside of the home (*p*=<.001). This is important as it was not identified in the April 2019 report.

Support from volunteers

Less than 10% of service users appeared to have received support from volunteers for face-to-face appointments. **This suggests that Community Connectors rather than volunteers are delivering support, which has implications for capacity and future service planning. However there were no differences in outcomes between those who did and did not receive support from volunteers (see Page 44 for further detail).** There were 508 service users who had received at least one face-to-face appointment with a volunteer (8.7% of a sample of 5850).

Support with journeys

Less than 10% of service users were recorded as being provided with support for journeys. The majority of journeys were to support people with attending community activities and some were to help people attending health care appointments. The latter is relevant because these costs may have been incurred by the statutory services if the British Red Cross had not provided the support.

The proportion of people receiving support with journeys was 9.1% (n= 533 of 5850 service users who received at least one face-to-face appointment and not received any support since 30/11/2019).

British Red Cross did start asking Connectors to record the reason for the journey around December 2019, and so we explored these. The sample is 1386 journeys (these are being analysed as standalone journeys rather than in relation to specific service users because the focus is on understanding their nature).

Table 8: Reason for the journeys

Journey reason	Number of journeys (n=1386)	Percentage
Facilitate community engagement	1046	75.5%
Facilitate social activity	196	14.1%
Attendance at health activity	74	5.3%

Facilitate errands	58	4.2%
Facilitate discharge	4	0.3%
Multi-purpose journey	8	0.6%
Total	1386	100%

As illustrated in table 8, almost 90% (n=1242) of journeys were to facilitate community or social engagement, for example attending a community group. About 5% (n=78) of journeys were to support a person with their health care such as attending a health appointment or to support discharge from hospital. This is important as there may be associated costs if the British Red Cross had not undertaken the journey. For example a different provider may have had to provide transport such as an ambulance service. More concerning is that the service user may not have attended the appointment had they not received support. Since May 2017 there have been 2,729 journeys and if the rate of support was consistent, then this would be the equivalent of the British Red Cross providing 142 journeys where service users were being helped with accessing health services/being discharged from hospital.

Total amount of support in terms of face-to-face and telephone appointments combined

The average (median) amount of contacts was 4, with 75% of service users receiving 9 or less contacts which includes both telephone and face-to-face appointments. Just over a fifth of service users had one contact (21.7%, n=1482). A further 13.2% (n=902) received 2 contacts and 9.6% (n=-653) had 3 contacts. The distribution of contacts is illustrated Figure 3. In terms of needing greater support, there were 5.8% of service users who received more than 20 contacts (n=428). Whilst this is only a small proportion, it raises issues about how to manage people who require greater support within the capacity of a scheme especially if there are people who are awaiting support.

Figure 3: Total number of contacts (telephone and face-to-face contacts)
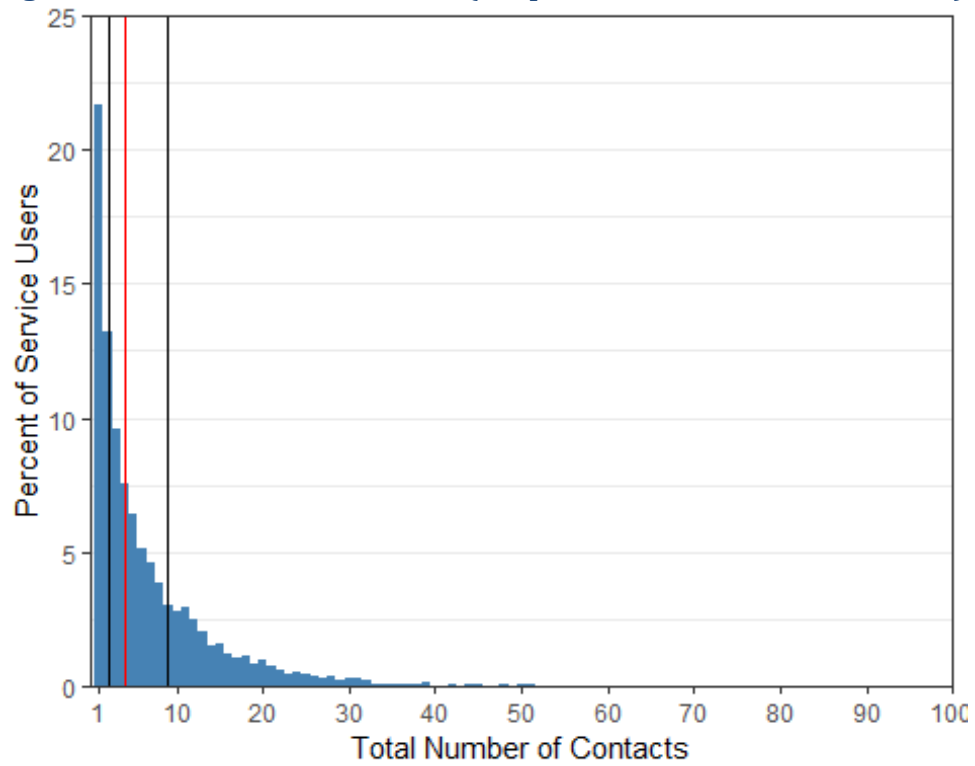
Interquartile range- 2-9 contacts (signified by black lines). Average (Median) - 4 contacts (signified by the red line)

Figure 4: The total amount of support service users received (n=6789- please note this sample is smaller as not all service users have times recorded for all their appointments)
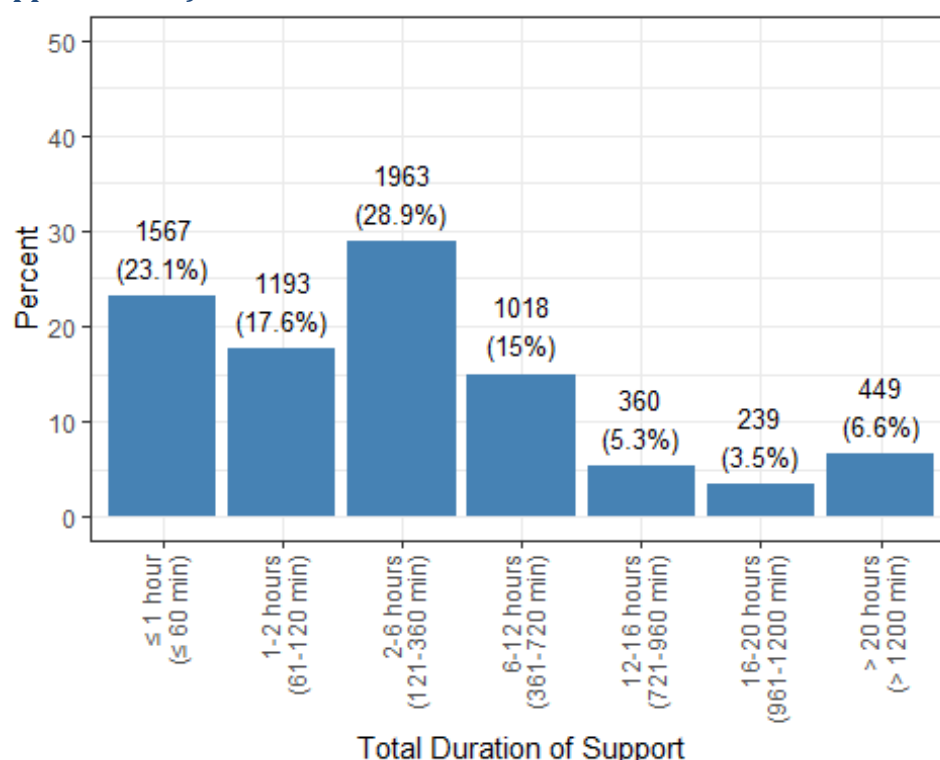
Generally, service users received short-term support which appeared tailored to meet their needs. The average (median) amount of total support was 3 hours, with 75% of service users receiving 7.5 hours or less of support. As illustrated by Figure 4, almost a quarter of service users received an hour or less of support (23.1% (n=1567). Just under a half of service users (46.5%, n=3156) received between 1 and 6 hours of support. A further 15% (n=1018) received between 6 and 12 hours of support and 15.4% of service users had over 12 hours of support, this included a small number of people receiving over 20 hours of support (6.6%, n=449).

Workforce
The majority of support (telephone and face-to-face combined) was delivered by Community Connectors which has implications for future service planning. Just over 10% of service users received at least one contact with a volunteer (11.1% n=406). This is based on people who received both telephone and face-to-face support (n=3663).

Signposting
Over the a third of service users received signposting. The proportion of service users receiving signposts has increased since the April 2019 report to 34.7% (n=3207). This is based on a sample of 9253 because of service users being able to be signposted irrespective of the support they received. The proportion of people signposted has increased by almost 10% than in the

previous analysis indicating Connectors may be undertaking more signposting. This could be partly because the Connectors are more aware of what is happening in the locality now they have been in post for a period of time. However, it also could be that Connectors are getting better at recording signposting, because under reporting was an issue in the April 2019 report. Over half of signposted service users received one signpost (57%, n=1827). A further 29.2% (n=936) received 2 or 3 signposts. Smaller numbers of service users received 4 or more signposts with 1.1% of people receiving 10 or more signposts (n=38).

Figure 5: Number of signposts received by service users (n=3,207)
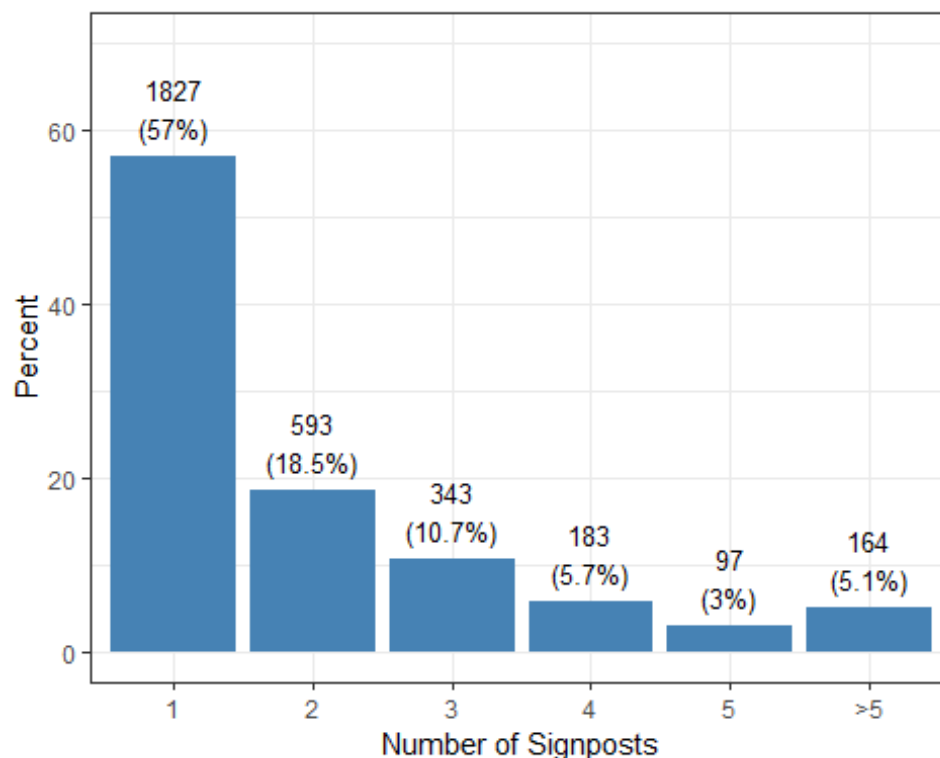
Figure 6: Primary source of signposting (n=7,045)
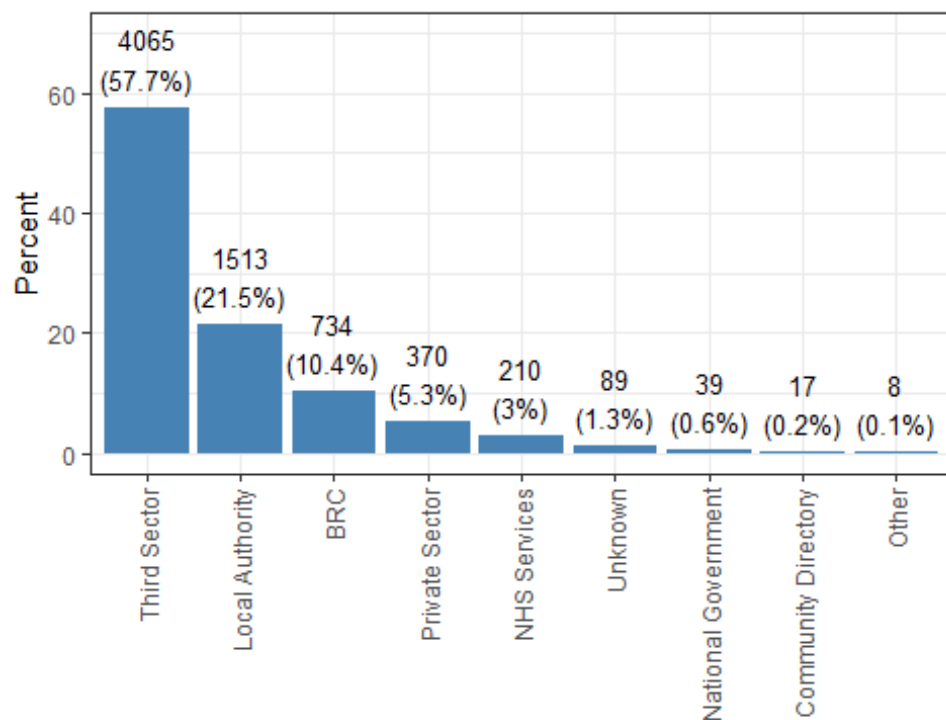
The majority of signposts were to the third sector, illustrating the importance of the sector in supporting people experiencing loneliness. The findings were similar to the April 2019 report: 57.7% of signposts were to the third sector (n=4065) and 21% to the local authority (n=1513). Signposting to other British Red Cross services was still an important source, with 10.4% service users being signposted (n=734). A small number of service users were signposted to NHS services, the private sector or the national government such as Job Centres. In relation to the more detailed secondary sources, the proportions of signposts were consistent with the April 2019 report. For example the greatest proportion of signposts was to age related third sector organisations such as Age UK (n=15.3% of all signposts, n=1081). Notably signposts had increased to advocacy and advice services such as to the Citizens Advice Bureau (n=5% n=351).

Differences in support between trigger groups

Table 9: Differences in the support received between trigger groups

Trigger group	Amount of contacts?	Minutes of support?	Home-based appointments?	More signposting?	Support from volunteers?	Support with journeys?
Living without children at home (n=978)	More	More	More	More	Less	More
Recently bereaved (n=606)	More	More	More	More	More	X
Recently divorced or separated (n=199)	More	More	X	More	X	More
Experiencing health issues (n=4432)	More	More	More	More	X	More
With mobility limitations (n=2261)	More	More	More	More	X	More
Young parents (n=75)	X	X	Less	Less	X	Less
No trigger group (n=1632) (compared to those in any trigger group)	Less	Less	Less	Less	Less	Less

Note: ✘ denotes no statistically significant difference between those with or without the trigger group. Where significant differences identified p=<.05

As can be seen in table 9, there were statistically significant differences in service provision between trigger groups, with some groups receiving more support than others which has implications for service delivery and capacity.

In terms of number of contacts and length of contact, all of the trigger groups besides Young Parents received more contacts than other service users and this greater rate was statistically significant. The average (mean) number of contacts in the 5 trigger groups was 8.2-9 compared to approximately 7 appointments for other service users and the service users generally received about 2 hours more of support Whilst this may be one or two additional contacts per service user it does have implications for service-capacity and delivery. In contrast, Young Parents appeared to receive one less contact than other service users. More noticeable was service users with no trigger groups recorded appeared to potentially have 4 contacts less than service users recorded in a trigger group (4 contacts v 8 contacts) and almost 3½ hours less of support (No trigger group 227.22 minutes compared to In a trigger group: 434.32 minutes of support). This has considerable implications for service provision but also raises questions why these service users are receiving less support. There were differences between trigger groups in terms of location of appointments, this was discussed in greater detail in a previous section.

There were considerable differences in the proportion of service users who were being signposted in each trigger group, which again reflects the differences in service delivery. Whilst amongst service users generally, 38.4% (n=2623 of 6828) were signposted, Young Parents (17.3%, n=13) and Individuals not in a trigger group (24.4%, n=399) received less signposting and this difference was statistically significant. In contrast, the other trigger groups were more likely to receive signposting, with all these trigger groups having signposting rates between 40-50%. For example, 48.2% of Individuals who were recently divorced/separated were signposted. The difference in signposting rates raises questions about whether service users from different trigger groups are accessing the programme for different reasons and whether there are less opportunities for signposting young parents.

There were some differences between trigger groups in terms of the proportion of service users who received support from volunteers. For most trigger groups there was no difference in terms of the amount of service users who received support from volunteers. Individuals without a trigger group recorded (8.2%, n=55) and Individuals Living without children at home/recently retired (7.8%, n=42) were less likely to receive support from a volunteer. In contrast individuals recently bereaved were more likely to receive support from a volunteer (16.9%, n=72).

There were differences between trigger groups in terms of the proportion of users who received support with journeys, although some of this variation may be related to people over 60 being more likely to receive support with journeys. Not surprisingly individuals with Health Issues (8.4% n= 374) and Individuals with Mobility Issues (9.6%, n=217) were more likely to

receive support with journeys. However, this was also the case for Individuals who were recently divorced and separated (11.6%, n=23) and Individuals Living without children at home/recently retired (13.8%, n=135). Conversely, Young Parents (1.3%, n=1) and Individuals not recorded in a trigger group were less likely to receive support with journeys (5.8%, n=95). However differences with support with journeys could be linked to age than trigger groups specifically, with over 60s more likely to receive support with journeys (10%, n=343) than under 60s (7%, n=138) (p<.001). Either way, it is worth noting than some service users appear to need more support with journeys than others.

Reason for support finishing

Table 10: Reason for support finishing

Early termination or Planned	Specific Reason	Number (n=9242)	Percentage
Early termination	Service user need intensified	413	4.5
	Service user choice	2069	22.4
	Lost contact	468	5.1
	Death of service user	89	1
	Went into hospital	220	2.4
Planned ending	End of agreed service provision	4046	43.8
Unknown	Other reason (not specified)	1453	15.7
Missing	Missing	482	5.2

Support generally finished because it was the end of agreed service provision or because of service user choice. This demonstrates how support is being tailored to people's needs and that generally people appear to require a smaller amount of support than initially anticipated when the service specification was designed. As shown in Table 10, the End of agreed service provision was the main reason for service users finished in the service (43.8%, n=4046). Service user choice was the second most common reason for support finishing (22.4%, n=2069).

3. The impact of the Community Connector programme

Introduction

This section focuses on considering the impact of the Community Connectors programme and any differences in outcomes both between groups of service users but also in terms of the nature of the support delivered.

Changes in loneliness

Almost three-quarters of service users experienced an improvement in their loneliness as measured by the UCLA between starting and finishing the Community Connectors programme. Specifically, 72.6% experienced an improvement in their loneliness (n=1634 of a sample of 2250). A further quarter of service users maintained their level of loneliness (n=24%, 541) and a small number of service users became lonelier (3.3%, n=75).

There were differences in the proportions of people who experienced an improvement in their loneliness amongst certain trigger groups (described in Table 11). Individuals recorded as Living without children at home/recently retired (79.6%, n=366 of a sample of 460, p=<.001) and Individuals recently divorced/separated (83.2% n=84 of a sample of 101, p=.020). There was some evidence that Young Parents are particularly benefitting from support as all 10 service users had a reduction in loneliness. However, as this is a very small sample and there are recording issues with this group, very little can be ascertained from this finding.

Table 11: Differences in improvements in loneliness between trigger groups

Trigger group (number of service users in the trigger group)	Number in trigger group experiencing improvement (%)	Statistically significant difference in proportion of improvement compared to service users not in the specific trigger group? (p Value)
Individuals living without children at home/recently retired (n=460)	366 (79.6%)	Service users in this trigger group were more likely to experience an improvement in their loneliness compared to other service users (<.001)
Individuals recently bereaved (n=276)	192 (69.6%)	No difference (.253)
Individuals recently divorced/separated (n=101)	84 (83.2%)	Service users in this trigger group were

		more likely to experience an improvement in their loneliness compared to other service users (.020)
Individuals experiencing health issues (n=1715)	1252 (73%)	No difference (.503)
Individuals with mobility limitations (n=970)	692 (71.3%)	No difference (.255)
Young parents (n=10)	10 (100%)	Sample size too small to consider significance.
People with no trigger group recorded (n=253)	172 (68%)	No difference (.095)

The average (mean) amount of improvement in loneliness scores was 1.84 (95% CI 1.77-1.91), although there were some differences between trigger groups (table 12). Three trigger groups generally experienced a greater level of improvement: Individuals living without children at home/recently retired (2.21) and Individuals recently divorced/separated (2.39). People with mobility limitations did appear to experience slightly less improvement but the difference is .2 of a point so is not considered meaningful. There was some evidence that Young Parents are experiencing a greater amount of improvement in their loneliness (improvement of 3). But the sample is very small and as mentioned above, there are issues with the recording of this trigger group to have faith in the finding. However, it is recommended further research is undertaken to explore the impact of the programme on Young Parents.

Table 12: Differences in the amount of improvement between trigger groups

Trigger group (number of service users in the trigger group)	**Average (mean) improvement in loneliness in trigger group**	**Statistically significant difference in amount of improvement compared to service users not in the specific trigger group (p Value)**
Individuals living without children at home/recently retired (n=460)	2.21	People without children living at home/recently retired appear to have on average a greater reduction in their loneliness (<.001)
Individuals recently bereaved (n=276)	1.87	No difference (.785)
Individuals recently divorced/separated (n=101)	2.39	People recently divorced/separated appear to have on average a greater reduction in their loneliness (.002)

Individuals experiencing health issues (n=1715)	1.86	No difference (.310)
Individuals with mobility limitations (n=970)	1.73	People with mobility limitation appear to experience slightly less improvement than service users not in the trigger groups but it was not a meaningful amount (.010)
Young parents (n=10)	3.00	Sample too small to consider significance.
People with no trigger group recorded (n=232)	1.67	No difference (.105)

It appeared Individuals living without children at home and Individuals recently divorced/separated were both more likely to experience an improvement in their loneliness but also experience a greater amount of improvement than other service users. The service appears to also have a positive impact on Young Parents, who have not traditionally been the recipients of loneliness services. However the Young Parents sample is exceptionally small and there are difficulties with the reliability of this trigger group. Given this, it is recommended that British Red Cross may want to undertake some targeted monitoring of this trigger group such as asking Community Connectors to prioritise collecting date of birth and UCLA data for service users they classify as Young Parents.

Impact of demographics on loneliness outcomes
As described in Table 13, there appeared to be no differences in loneliness outcomes between service users belonging to different demographic groups. Under 60s had a greater improvement in their UCLA score, however the difference was only .29 so would not be considered meaningful. In terms of service users being classified as lonely or not lonely (Lonely=UCLA score of 5-9), there was a statistically significant difference in loneliness outcomes between those who were Lonely or Not Lonely at the start of support (Lonely are people scoring a 5 or more on their UCLA baseline measure). However the difference is likely to be because of the statistical phenomenon of Regression to the Mean- in that for people who start off with a higher UCLA score (and thus are lonely) there is more scope to show an improvement than those initially classed as not lonely. Given this, not too much should be read into this difference.

Table 13: Differences in outcomes between demographics

Variable	Statistically significant difference between demographic groups in whether someone is likely to experience improvement (*p* value)	Statistically significant difference between demographic groups in terms of how much change is experienced (*p* value)
Gender - male or female	No difference (.822)	No difference (.397)
Ethnicity - White British or not	No difference (.124)	No difference (.224)
Age - Over 60 or under 60	No difference (.052)	Evidence that service users under 60 had greater amount of improvement than service users aged 60 or older. But the difference in averages (means) is .29 (<.001)
Living alone or not	No difference (.919)	No difference (.825)
Lonely or not	Evidence that service users who were lonely at baseline were more likely to experience improvement than those not lonely at baseline (<.001)	Evidence that service users who were lonely at baseline had a greater amount of improvement in their loneliness score. This was quite a big difference of 2.13 v .36 however this is most likely due to regression to the mean.(<.001)

A high proportion of service users shifted from feeling lonely to not feeling lonely when receiving the Community Connectors programme (table 14). At baseline, 83.9% of service users were recorded as feeling lonely (n= 1887) and this had reduced to 47.4% of the sample (n=1066) by the end of support. This change was seen amongst all the trigger groups besides Individuals recently bereaved. In most trigger groups, over 80% of service users were classed as lonely before receiving support but this fell to less than half after engaging with the programme. Amongst Individuals Recently Bereaved, there was still a large decline in the number of people classed as lonely but the decline was not as large as in the other groups, with 56.5% of service users still being classed as lonely after receiving support. Amongst individuals feeling lonely at the start of receiving support, 45% (n=850) of these were no longer classed as lonely at the end of receiving support.

Table 14:- Changes in loneliness by trigger group

Trigger groups	UCLA loneliness scores			
	Not Lonely (baseline)	Lonely (baseline)	Not lonely (end)	Lonely (end)
	N (%)	N (%)	N (%)	N(%)
Living without children at home	55 (12)	405 (88)	247 (53.7)	213 (46.3)
Recently bereaved	31 (11.2)	245 (88.8)	120 (43.5)	156 (56.5)
Recently divorced/separated	12 (11.9)	89 (88.1)	56 (55.4)	45 (44.6)
Experiencing health issues	261 (15.2)	1454 (84.8)	873 (50.9)	842 (49.1)
With mobility limitations	178 (18.4)	792 (81.6)	500 (51.5)	470 (48.5)
Young parents	1 (10.0)	9 (90.0)	6 (60.0)	4 (40.0)
Not in a trigger group	45 (19.4%)	187 (80.6%)	133 (57.3)	99 (42.7)

Differences in outcomes by different service delivery models

One issue identified as important by the stakeholders was differences in impact for service users who received the support, as per the service specification, compared to those who did not. The original service specification was fairly flexible and consisted of a number of elements:

(1)   Service users would have up to 12 weeks of support, but this would be tailored to individual need and there was some flexibility for slightly longer support if need be
(2)   Service users would be signposted to other activities
(3)   Support would be delivered by volunteers as well as Community Connectors

An additional feature identified subsequently was a service user receiving at least one session of face to face support. The components of service provision were explored individually to understand whether they were related to differences in loneliness outcome.

There were no differences in loneliness outcomes for those who did or did not receive support from a volunteer and/or were signposted. There was no difference between service users who received support from volunteers or not in terms of improvement in loneliness (.289). So whilst delivery of the programme by volunteers was lower than anticipated, it appears not to have an impact on

outcomes. So the issue is more one of service capacity and costs of running the programme. Additionally there was no difference in outcomes for people who received signposting support and those who did not *(p*=.144). However not seeing a difference is somewhat anticipated because the impact of being signposted may not be experienced whilst a service user is still receiving support from a Community Connector.

Differences in number of contacts and loneliness outcomes

It appears important for the British Red Cross to continue to tailor support to the needs of the individual service user whilst also encouraging everyone to receive at least two face-to-face appointments. Providing people received at least two face-to-face appointments, the precise number of appointments did not appear to impact on changes in loneliness. As illustrated in Table 15, there appears lower improvement rates amongst service users who received telephone only support and people who only received one face-to-face appointment. Similar proportions of service users experienced an improvement in their loneliness irrespective of whether they received 2 or more face-to-face appointment, The extent of change was at times statistically significant but was a minimal amount so not a meaningful difference.

Table 15: Differences in outcomes depending on the nature of the support

Number of contacts	Number of service users (n=2182)	Mean change in UCLA score (mean 1.81)	Percentage of service users who experienced some improvement on their UCLA score (mean 72.1%)
1 Telephone support only	14	1.64 (Sample size too small to say with certainty the impact)	64.3% (Sample size too small to say with certainty the impact)
2+ telephone calls (but calls only)	51	1.56 (Significantly smaller but by .2 of a change so not necessarily a meaningful difference)	56.9% (Significantly less Improvement)
1 face to face appointment	57	1.64 (Not significantly different)	59.6% (Significantly less improvement)
2-7 contacts (face to face and some telephone)	794	1.79 (Not significantly different)	72.7% (Not significantly different)
8-12 contacts (face to face and some telephone)	510	1.82 (Significantly greater great	73.1% (Not significantly different)

		but by .1 of a change so not necessarily a meaningful difference)	
13-20 contacts (face to face and some telephone)	441	1.77 (Not significantly different)	72.6% (Not significantly different)
Over 20 contacts	315	1.75 (Not significantly different)	73.7% (Not significantly different)

There was a significant difference in the likelihood of experiencing improvement between service users who received at least one face-to-face appointment and people who received only telephone support. 72.8% of service users receiving face-to-face support experienced an improvement in their loneliness (n= 1536 of 2111). In contrast, amongst service users who had telephone support only the proportion of improvement was 58.5% (n= 38 of 65) (p=.013).

It appears important for service users to receive 2 or more face-to-face appointments. There appears to be no differences in outcome between service users who receive between 2 and 20 face-to-face appointments (table 16). Whilst it could be argued that this raises questions about whether service users should have fewer appointments, it rather should be seen as evidence about the importance of Connectors being led by the needs of individual service users in relation to service provision. Service users who had over 20 face-to-face appointments were more likely to experience an improvement in their loneliness and experience a greater improvement. However, it is appreciated that routinely offering this number of appointments to service users would change the nature of the programme and have implications for capacity. It does however, demonstrate that when Connectors have undertaken more lengthy work with individual service users this additional resource had been fruitful in terms of improving loneliness. At the other end of the spectrum there was much lower improvement rates for service users who received one face to face appointment.

Table 16: Differences in UCLA scores between starting and finishing the programme depending on the number of face-to-face appointments received

Number of face to face appointments	Number of service users (n=2117)	Average (mean) change in UCLA score (average in this sample: 1.83)	Percentage of people who experienced some improvement on their UCLA score (average in this sample: 72.6%)
1 face to face appointment	215	1.58 (Significantly lower)	54.4% (Significantly lower)
2-5 face to face appointments	866	1.63 (No difference)	74.5% (No difference)
6-12 face to face appointments	766	1.87 (No difference)	73.6% (No difference)
13-20 face to face appointments	206	1.97 (No difference)	74.8% (No difference)
Over 20 face to face appointments	64	2.6 (Significantly higher)	87.5% (Significantly higher)

There appears no difference between people who received the anticipated 8-16 contacts and those who received more or less contacts. In the initial British Red Cross service specification, it was anticipated that service users would have around 12 weeks of contact. Given this, we explored differences in outcomes between service users who had between 8-16 contacts, including at least one face to face appointment, and those who did not (this included service users who may have had only a smaller number of contacts or a larger number of contacts). Of the sample of 2,182 service users, there were 769 people who had the service specification level of support 'on spec' (35.2%), compared to those 'not on spec' (n=1413, 64.8%). However, no statistically significant difference was observed in whether service users experienced improvement in their UCLA scores because of receiving a specific amount of contact ($p=.437$).

Change in Wellbeing
Over three quarters of people had an improvement in their wellbeing between starting and finishing in the service (77.7% n= 73 of 94). A small proportion of service users experienced some deterioration in their wellbeing (14.9%, n=15 of 94). Furthermore, a few maintained their wellbeing (7.4%, n=7 of 94). Meaningful change has been cited as a change of 3 or more, using this criteria 59.6% of service users (n=56 of 94) experienced some a meaningful change in their wellbeing. The amount was an average change of 3.6 points (95% CI: 2.5-3.7). This is over the threshold of meaningful change. The changes in

wellbeing statistics are reflective of the April 2019 report as there was no difference in changes in wellbeing between people experiencing health issues and people with mobility issues. Further subgroup analysis was not undertaken due to small sample sizes.

Generally, service users had lower wellbeing than the UK average, both when they started and finished in the programme The average (mean) baseline WEMWBS was 18.74 (95% CI: 18.2-19.5) (n=463). The end of service WEMWBS was 22.74 (95% CI 21.96-23.51). (n=164). Both these figures are below the national wellbeing average of 25.2 (Office for National Statistics, 2019).

There was some evidence that people generally sustained improvements in wellbeing after finishing in the service. The average (mean) WEMWBS score at follow-up was: 22.24 (95% CI: 21.06-23.42) (n=108), which was a decrease of a half a point. This indicates there may not be the same reduction in wellbeing once people finish in the Community Connectors programme as there was experienced in relation to loneliness. Unfortunately, the service users completing a follow-up WEMWBS scale and those completing one when finishing the service differed so there was too small a sample to explore the change between finishing in the service and follow-up period for individual services users. Given this, there are questions about the WEMWBS follow-up finding and it is recommended that this is an area of further research.

In terms of the Office for National Statistics 4 questions, the findings of the three wellbeing question on happiness, life satisfaction and feeling life was worthwhile were consistent with the April 2019 report. Anxiety was slightly different in that amongst the sample an average (mean) improvement of .5 was observed (Baseline- 4.71, n=494) and End- 4.24, n=171). As in the April 2019 report, about half of service users experienced an improvement in their anxiety between starting and finishing in the Community Connectors programme (n=48, 48.5%).

Follow-up UCLA
People appeared to find it difficult to sustain improvements in their loneliness when they were no longer receiving support from the Community Connector programme (figure 7). Almost half of service users experienced an improvement in their loneliness between starting in the programme and 3 months after finishing. However, generally service users did experience some deterioration in their loneliness between their support finishing and three months later. The average change between baseline and follow-up was .64 (95% CI: .31-.98) (based on a sample of 162 service users). This means individuals had an improvement in their loneliness by half a point between starting in the programme and three months after finishing. Similar to the April 2019 report, 46.2% (n=61) of service users experienced an improvement in their loneliness between starting in the programme and the follow-up period. Just under a third of individuals maintained their level of loneliness (31.8% n=42) and just over a fifth of service users experienced some deterioration (22%, n=29).

Between finishing in the programme and the follow-up period, there appeared to be a deterioration in loneliness (UCLA= -1.41) (95% CI -1.4-1.8). Just over 10% of service users experienced an improvement in their loneliness (11.8%, n=12). Over a quarter of service users maintained their level of loneliness (28.4%, n=29). However, 59.8% of service users (n=61) experienced a deterioration in their loneliness.

Figure 7- Change in loneliness during follow-up period

Change in loneliness during follow-up period
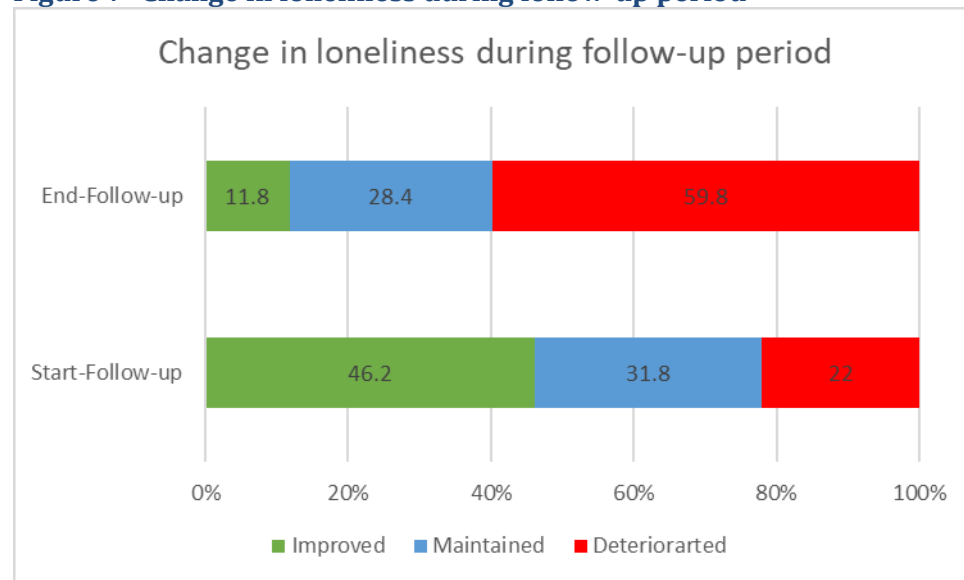
Given the number of people experiencing some deterioration during the follow-up period, it was important to explore any differences in outcome.

Table 17: Differences in deterioration between finishing in the programme and follow-up period

	Variable	Whether there was a statistically significant difference in whether service users experienced deterioration or not (*p* value)
Demographics	Gender	No difference (.232)
	Ethnicity - White British or other	No difference (.941)
	Age	No difference (.606)
	Age - over 60 or under 60 years old	No difference (.784)
	Living arrangements - living alone or not	No difference (.111)
Trigger groups	Experiencing health issues	No difference (1.00)
	With mobility limitations	No difference (.283)
	Living without children at home/recently retired	No difference (.944)

	Young parents	No difference (.402)*
	Recently bereaved	No difference (.752)
	Recently divorced/separated	No difference (.820)
	People with no trigger group recorded	No difference (1.00)*
UCLA Score	Baseline - lonely or not	No difference (.612)
	End - lonely or not	If a service user is not lonely at the end of the programme they were more likely to experience deterioration. (<.001)
Service received	Whether the service user was signposted	No difference (.281
	Whether the service user received support with journeys	No difference (.977)
	Whether the service user received support from volunteers	No difference (.058)
	Whether appointments only took place in the home	No difference (1.00)
	More than 8 contacts	No difference (.246)

*Fisher's Exact Test rather than Chi Square test because of small sample size

As illustrated by Table 17, there appeared no specific types of service users or aspects of support which appeared to be associated with people experiencing deterioration between finishing in the support and the follow-up period. The exception were individuals who were not lonely when finishing in the programme, but this is more likely to be due to the regression to the mean, in that these people had more scope to deteriorate than other service users.

4. Matched comparator analysis

As with the April 2019 report, the matched comparison was limited to those who had data recorded. There was evidence that for service users, these were individuals who were more lonely or more likely to be in the trigger groups while for ELSA, these were individuals who were less lonely and less likely to be in the trigger groups (Appendix 1 table 1). Matching results may therefore be systematically biased (i.e. the data is not missing randomly but is associated with whether or not service users were in a trigger group or not) compared to if everyone who used the service also had data. Results may also not be generalisable to other service users who do not have data.

Compared to the previous analysis, matching sample sizes were larger ranging from 1486 (n=743 for service users and ELSA data) to 1226 (n=613 for service users and ELSA data) (Appendix 1 table 2). There were still some issues with matching therefore all samples were tested as before. Age was not well matched so this was included as a control in the analysis.

Unlike the main analysis, the matched sample for the additional sample remained similar to the previous analysis with small sample sizes (n= 252 and n=246 respectively with half of these being service users and the other half ELSA data). The additional follow ups were more lonely at baseline compared to the overall sample and therefore the matching reflects this (Appendix 1 table 3).

Matching results: change in raw loneliness (UCLA) scores for service users compared to ELSA

The service users had improvements and had lower raw loneliness scores at the end of service compared to the matched ELSA control groups. The change in raw UCLA loneliness scores for service users compared to the ELSA control group, after controlling for age, was -0.7 to -0.9 depending on the matching sample and all were statistically significant. Group 5 had a larger average (mean) change [-0.9 (95% CI: -0.7 to -1.1)] while in the additional follow-up there was a slightly smaller change [-0.7 (95% CI: -0.3 to -1.1)]. Results remain largely the same compared to the analysis in April 2019 when considering change in raw scores.

For the main analysis, the magnitude of change was the same regardless of the match sample group and the variation in the 95% confidence intervals shows that these were statistically significant differences. There is wider variation for the additional follow-up analysis with change in service users ranging from -0.3 to -1.2 which shows more uncertainty in the outcomes for the additional follow up (a potential problem with smaller samples). Overall, however, the similarities in results indicates that the finding is robust.

Including the trigger groups in the analysis did not change the overall outcome in terms of magnitude or variation in the raw scores (Appendix Table 4). We explored whether the trigger groups had an impact on end of service raw UCLA scores and found that only being divorced had a negative impact i.e. lower

loneliness scores (we used match group 3 where more of the trigger groups were used for matching to explore this, otherwise any differences could be due to poor matching). The 'divorced' group had small numbers; therefore, this result may not be generalisable.

As with the April 2019 results, **the results show that compared to those in ELSA who were not in the trigger groups, service users benefitted from the service regardless of whether they were in a trigger group or not** (table 18). Those with and without health issues had smaller benefits in terms of changes in raw loneliness scores compared to the other trigger groups. Service users who were divorced had the largest gain, but as noted, this group is small. This may suggest that the strategy to focus less resources on those who are not in trigger groups works well. However, it is important to note that although the differences are not statistically significant, ELSA individuals who were in the trigger groups divorced or bereaved had an average negative change in raw loneliness scores which may indicate that some in this group will improve without an intervention. This is not unexpected as the impact of getting a divorce or bereavement on loneliness can be expected to reduce naturally with time.

Table 18: Matched analysis - change in service user raw loneliness scores by trigger group compared to ELSA - group 3

	Health	**Mobility**	**Divorced**	**Bereaved**	**No children**
ELSA in trigger group (95% CI)	0.3*** (0.1 to 0.6)	0.0 (-0.2 to 0.3)	-0.4 (-1.4 to 0.6)	-0.1 (-0.4 to 0.3)	0.2 (-0.1 to 0.5)
BRC not in trigger group (95% CI)	-0.5*** (-0.8 to -0.2)	-0.7*** (-1.0 to -0.5)	-0.7*** (-0.9 to -0.6)	-0.8*** (-0.9 to -0.6)	-0.6*** (-0.8 to -0.5)
BRC in trigger group (95% CI)	-0.5*** (-0.8 to -0.3)	-0.7*** (-0.9 to -0.5)	-1.6*** (-2.4 to -0.9)	-0.7*** (-1.0 to -0.4)	-1.0*** (-1.3 to -0.7)

*Note: green – statistically significant reduction in loneliness scores; blue- reduction in loneliness scores, not statistically significant; orange- increase or no change in loneliness score, not statistically significant. *Statistically significant differences. All groups are compared to ELSA who are not in the trigger group. BRC - British Red Cross Service Users; ELSA - English Longitudinal Study of Ageing*

Matching results: Changes in loneliness score groups in service users compared to matched ELSA sample

Improvements, no change and deterioration groups

There was a **20% difference between service users and ELSA that may have been attributable to the Community Connectors programme** when considering changes in loneliness scores in terms of improvement, no change or deterioration. The majority of service users (ranging from 63% to 66 %) who

had end of service data had **improved** (table 19). This increased to 70% and 74% in the additional follow up. In comparison, 40-46% had improvements in UCLA scores for ELSA (46% and 49% additional follow up). Results also remained the same to previous analysis.

In the service users, a small proportion (4.0 to 6.0%) experienced a **deterioration**. This compared to 17 to 19% for ELSA (15% in the additional follow-up) indicating **less deterioration in service users compared to ELSA** (Table 19). Finally, around 29% to 32% % of the service users did not report any change in their UCLA scores compared to 36% to 41% in ELSA. Differences were all statistically significant.

Loneliness groups

As with the previous analysis, the proportion **who were lonely at baseline and who were no longer lonely** at end of service ranged from 34% to 37% for service users compared to 18% to 21% in ELSA, indicating that **using the service was associated with reductions in loneliness when compared to ELSA participants**. On the other hand, **a smaller proportion of service users became lonely compared to ELSA matches** (Table 19).

However, unlike the previous analysis, for service users, the largest group were those **who were lonely at baseline and were no longer lonely at end of service** for four of the matched groups (35% to 37%) whereas the largest group in ELSA were those who were lonely and did not experience any change (Table 19). A smaller proportion of service users became lonely compared to those in ELSA. Differences were all statistically significant. The proportion who were not lonely at baseline and who experienced no change was similar across the service users and ELSA with some slight difference.

Table 19: Matching analysis changes in loneliness scores grouped by improvement and loneliness in matched samples

	Match group 1		Match group 2		Match group 3		Match group 4		Match group 5		Additional data Match group 1		Match group 2	
	BRC	ELSA	BRC	ELSA	BRC	ELSA	BRC	ELSA	BRC	ELSA	BRC	ELSA	BRC	ELSA
UCLA Scores	%	%	%	%	%	%	%	%	%	%	%	%	%	%
N	*743*	*743*	*692*	*692*	*652*	*652*	*613*	*613*	*540*	*540*	*126*	*126*	*123*	*123*
Improvement	**65.7**	**43.7**	**63.6**	**41.6**	**62.4**	**41.6**	**63.6**	**43.1**	**64.6**	40.0	**70.6**	**46.0**	**74.0**	**48.8**
No change	28.9	38.1	31.1	39.3	31.6	37.7	32.1	40.5	31.3	**41.3**	25.1	38.9	22.0	35.8
Deterioration	5.4	18.2	5.4	19.1	6.0	20.7	4.2	16.5	4.1	18.7	4.0	15.1	4.1	15.5
Loneliness														
N	*743*	*743*	*692*	*692*	*652*	*652*	*613*	*613*	*540*	*540*	*126*	*126*	*123*	*123*
Became not lonely	34.9	19.1	**35.0**	18.4	**34.7**	17.9	**35.2**	21.2	**37.0**	19.1	34.1	20.6	36.6	18.7
No change – not lonely	27.6	30.7	29.9	30.1	29.6	30.5	29.0	23.5	30.0	25.9	11.9	16.7	12.2	13.8
No change – lonely	**35.1**	**44.0**	32.7	**44.1**	33.1	**44.6**	34.1	**48.1**	30.7	**48.7**	**53.2**	**57.9**	**50.4**	**62.6**
Became lonely	2.4	6.2	2.5	7.5	2.6	6.9	1.6	7.2	2.2	6.3	0.8	4.8	0.8	4.9

Matched results: changes in wellbeing measures (ONS-4) and health from baseline to end of service in service users compared to ELSA (additional follow-up)

We also explored changes in wellbeing (ONS-4) and the health question which were in both the additional follow up and the ELSA data. Note we did not explore WEMWBS or the social activity question as these were not available in ELSA. We only matched based on the criteria used for group 1 and 2 due to smaller sample size.

Wellbeing changes

Service users were more satisfied with their lives than their ELSA matches at the end of programme. Mean changes in life satisfaction from baseline to end of service for the service users were positive and larger than their matched ELSA sample and the differences were statistically significant (mean difference ONS satisfied 1.4 (95% CI: 0.6 to 2.2) (n=161)) and 1.1 (95% CI: 0.3 to 1.9) (n=157)). Taking into account trigger groups did not make a difference in magnitude or statistical significance.

There were larger improvements in worthwhile activities for service users compared to the matched ELSA sample. Mean changes in service users' perceptions of whether what they did was worthwhile were positive and larger than their matched ELSA sample at end of service and the differences were statistically significant (mean difference ONS worthwhile 1.3 (95% CI: 0.4 to 2.1) group 1and 1.2 (95% CI: 00.4 to 2.1] group 2).

Mean changes in happiness for the service users from baseline to end of service were positive and larger than their matched ELSA sample but were not statistically significant differences (Mean change 0.8 (95% CI: -0.1 to 1.7) in group 1 and 0.6 (95% CI: -0.3 to 1.5) in group 2). This indicates that service users could have been more or less happy than the matched ELSA sample. Taking into account the trigger groups did not have an impact on the magnitude of difference for ONS happiness but it made the difference between the service users and ELSA statistically significant, when health issues were taken into account for the group 1 match.

There were no statistically significant differences in changes to how anxious service users felt compared to their matched ELSA controls. (Mean difference ONS anxious -0.3 (95% CI: -1.3 to 0.3) for group 1 and -0.2 (95% CI: -1.3 to 0.9) for group 2. This did not change when trigger groups were taken into account.

For some aspects of wellbeing, specifically life satisfaction and feeling life is worthwhile, service users had greater improvements, which were statistically significant, compared to the ELSA sample. There were greater improvements for happiness, but this was not statistically significant. There were no differences for feeling anxious. This may indicate that providing the service may have broader implications beyond loneliness but larger sample sizes would be required to confirm this finding as very few service users had wellbeing measures.

Comparing loneliness changes to wellbeing changes using effect sizes

In order to compare the changes to wellbeing with changes to raw loneliness scores, we compared the effect sizes[1] (note that these comparisons use different samples as there are fewer service users with wellbeing measures). Compared to the previous analysis, the effect sizes were slightly larger for loneliness scores and slightly smaller for the wellbeing measures. When comparing service users to their ELSA matched samples, effect sizes for change in the loneliness scores were small to medium for (=0.47 to 0.56) compared to matched ELSA controls.

Effect sizes ranged from small and not statistically significant in how anxious service users felt to medium (0.6 to 0.7) and statistically significant for how satisfied service users were or whether they did worthwhile activities compared to their matched ELSA controls (Appendix 1). These results suggest that changes in loneliness scores in service users may have been accompanied by slightly larger changes in wellbeing scores compared to ELSA. These results should be interpreted with caution due to the small sample sizes.

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[1] Values between 0.2 and 0.5, 0.5 to 0.8, and 0.8 or more denote ranges containing small, medium, and large effect sizes, respectively, according to Cohen's criteria (Cohen, 1992)

Appendix 1: Matching Analysis and Results

Appendix 1 provides additional information on the methods and results for the matched comparator work.

Method

Matching involves finding individuals with similar characteristics to the service users who would have needed the intervention but who have not received it in order to assess the impact of the intervention. The English Longitudinal Study of Ageing (ELSA) (Banks et al., 2019) was used to identify individuals who did not receive the Community Connectors intervention.

Data

ELSA is a longitudinal study of individuals aged 50 and over that is focused on ageing and asks questions on health, social life including the UCLA, well-being and activities. The original sample was drawn from households whose head was a participant in the Health Survey for England (HSE) in 1998, 1999 and 2001. Individuals were eligible in Wave 1 (2002-2003) if they were born before 1st March 1952 (i.e. aged 50 years and over) and still living in private residential address in England. Partners aged 50 years and over were also included. Over subsequent Waves of ELSA, attrition has been addressed by supplementing the cohort with additions from HSE. Data from the most recent two waves, 2014/15 and 2016/17, was used in the matching component. In both waves, data was collected using computer assisted personal interviews (CAPI). As partners could be included in the ELSA sample, there are potentially couples whose data would be dependent on each other and if both are selected for matching, this dependence would be carried into the analysis where there are no equivalent couples. Therefore, one individual from each couple was selected for inclusion in the sample. This was done by randomly dropping one individual in each couple using random numbers. Proxies could complete some questions in ELSA but given differences in self-report and proxy-report, these proxy reports were excluded.

The intervention group were service users that had used the Community Connectors programme. Note that the services were delivered in sites across England, Wales, Scotland and Northern Ireland which is broader than the data in ELSA which focuses on England. Matching was not restricted to just those from England in ELSA to maximise on available data. We tested whether there were any differences in terms of missing data and loneliness across the countries included in service user data to see whether this varied. The data provide in January 2019 (n=5,787) was used. Service users were assessed for inclusion at the start – we used data on those who were accepted (n=5,320/5,787). For those who were accepted, their status was recorded as closed (n=3,695) when they stopped using the service because they had reached the end of their agreed provision (n=1,224, 33%) or because the service user decided they no longer required support before the agreed provision period was over (n=1,209, 33%). However, a number of service users had their status closed because of reasons such as having no contact, needing other services, or other reasons which are not specified (n=1,102, 30%). Some cases were closed due to death (n=39) or admission to

hospital (n=119). In the analysis looking at change from baseline to end-of-service, we focused on those who had UCLA end-of service scores irrespective of the reason for a case being closed – although those who decline or cannot be contacted are also more likely to have missing end-of-service UCLA scores.

Measures and questions used

Matching requires the same information in both the service users and the chosen dataset – in this case ELSA. ELSA participants completed:

- Five questions relating to loneliness (feel lack companionship, feel left out, feel isolated from others, fells in tune with people around them, feel lonely), the first 3 of which are used to calculate the UCLA scores.
- Four questions on overall wellbeing based on the Office for National Statistics questions (happy, anxious, satisfied and whether things they do are worthwhile) with scores ranging from not at all (0) to completely (10)
- The CASP19 which is a set of 19 questions that ask about quality of life in older people. Scores range from 0 to 57 with higher scores indicating greater quality of life. It has been shown to be associated to some of the risk factors of loneliness such as living alone and difficulty walking (Howell D 2012).
- A self-rated health question – ranging from excellent (1) to poor (5). They also reported whether they had a limiting health conditions which was used to identify health issues.
- A variable to identify potential mobility problems was created in ELSA based on questions around problems walking including walking 100 yards, climbing several flights of stairs without resting and climbing one flight of stairs without resting.
- Bereavement was based on whether respondents reported that their spouse/partner had died since the last ELSA interview which covers a 2-year period.
- Divorce or separation was identified using information from the previous wave (2012/2013) on marital status. Individuals who were previously married or cohabiting but were now divorced or separated were identified as being recently divorced or separated.
- Participants were asked whether they had children and this was used to generate a variable about having no children.
- Living arrangements were based on a derived variable about the number of people living in a household – if this was reported as one, then they were considered to be living alone.
- Age, gender and ethnicity were also recorded.

Community connector service users completed:
- The first 3 UCLA questions from which the UCLA scores can be calculated.
- Information on whether individuals were bereaved, divorced, had no children, whether they had a health condition and mobility problems and whether they were new mums as well as date of birth, gender and ethnicity were recorded as part of the routine data collected by Community Connectors.
- A sub-set have the ONS4 and the SWEMWBS from the additional follow-up data

- A sub-set also have a self-rated health question and a question about how much their physical or emotional health interferes with their social activities which is similar to the questions from the Veteran RAND-36 questionnaire.

Matching

Matching relies on available information (observable characteristics) to identify suitable matches for the service users e.g. the level of their loneliness should match that of those who are identified from ELSA. In previous analysis (using the July data) we used age, gender, living arrangements (living alone vs. living with others) as well as two trigger groups (mobility limitations and health issues) to match. However, using only this information results in poor matches in terms of the key variable of concern which is loneliness (UCLA scores). We therefore matched on the trigger groups which occurred in both the service user data and the control data (ELSA) and a measure of loneliness (UCLA scores or questions). The updated matching criteria included:

1. Age-groups (50-60, 60-70, 70-80 and 80+), female, living arrangements (living alone vs not living alone) and UCLA scores groups (3-4, 5-6, 7-8 and 9)
2. Age-groups, female, living alone, the presence of health issues and UCLA scores groups
3. Age-groups, female, living alone, the presence of health issues, mobility limitations and UCLA scores groups
4. Age-groups, female, living alone and individual UCLA questions based on actual responses (1 to 3)
5. Age-groups, female, living alone, the presence of health issues and individual UCLA questions.

Groups were used for age and UCLA scores as using exact age or UCLA scores results in smaller matched samples. The 4 UCLA groups represent different levels of loneliness. Living arrangements were based on whether someone lived alone or not. Those in institutions and sheltered accommodation were assumed to not live alone. When using the UCLA questions, we only tested including the health issues trigger group as sample sizes were small. We did not include other trigger groups such as divorce or bereavement in the matching as these were generally better matched in the initial analysis. This also reduces the loss of data that is the cost of increasing the number of variables that we match on. We also did not match on ethnicity as majority of the service users were white.

We undertook matching for the smaller group who had additional follow-up based on the same criteria as 1 and 2 above. We did not undertake matching using 3, 4 or 5 as the sample size was much smaller. This still results in small samples therefore the analysis of the additional data is exploratory as they cannot be interpreted meaningfully in addressing questions about typical users of the Community Connectors service as they do not match the wider service users.

Analysis

Descriptive analysis

The service user data and ELSA were described in terms of demographics, trigger groups and UCLA and SWEMWBS scores where available in order to assess whether matching was required. Chi square tests were undertaken to compare the samples – comparing the service user data to ELSA in these characteristics to identify where there were differences. We also assessed the matched samples to see whether the matching had worked. This was tested for age and UCLA scores and any trigger groups not used in matching. Any statistically significant differences indicated that matching is needed or had not worked for that characteristic. As we are not using all the information it is likely that there will be some poor matches for trigger groups.

Missing data analysis

In order to support matching, only those who had no missing data on the characteristics that were used to identify their controls could be used as it is not possible to match without this information. This reduces the sample size on which analysis can be undertaken e.g. if an individual is missing age information but has all the other information, they cannot be matched. We compared those with and without missing data in age, gender, living arrangements and baseline UCLA data by looking at trigger groups. We also compared the baseline UCLA data for those who with and without end-of-service UCLA data. Any statistically significant differences indicated that those included in the matching were different from other service users and had an impact on generalisability of results i.e. results were relevant for those **with data** but could not be assumed to apply to everyone who used the service. Comparisons were done separately for the service user data and ELSA data.

Comparison of UCLA scores

The key assessment is the change in UCLA scores from baseline to end-of-service when comparing service users to ELSA matches. Negative values indicate improvements in terms of loneliness for service users compared to their ELSA match controls. We also considered what the impact of being in the different trigger groups was. This was done by including the trigger groups in the regressions as well as considering whether there were differences in the outcomes based on *simultaneously* being in a trigger group *and* being a service user. This could be done for all trigger groups apart from being a young new parent.

We assessed whether individuals had improvements, no change or deteriorated in their UCLA scores at the end-of service. This is important in order to identify what type of change has occurred in the service user sample compared to their ELSA matched controls. Finally, we assessed whether participants had changed in their loneliness status or not based on UCLA groups (lonely - UCLA score 6-9; not lonely - UCLA score 3-5). Individuals could be lonely at baseline and not lonely at end-of-service or still be lonely and those who were not lonely at baseline could remain the same at end-of service or they could become lonely.

Comparison of other wellbeing and health measures

The wellbeing questions (ONS-4) and general health were also compared using a similar approach to the UCLA scores i.e. using regressions with start and end-of-service scores. In order to compare wellbeing changes to loneliness changes, Cohen's D effect sizes, which are standardised differences (calculated as the difference in baseline and end-of-service scores divided by overall standard deviation) were calculated for UCLA and these measures. Values between 0.2 and 0.5, 0.5 to 0.8, and 0.8 or more denote ranges containing small, medium, and large effect sizes, respectively according to Cohen's criteria (Cohen, 1992). Effect sizes have an added advantage over mean differences as they standardise the scores from different measures to allow comparisons e.g. UCLA scores only range from 3 to 9 while ONS-4 questions range from 0 to 10. Effect sizes also take into account variation in the scores (standard deviation). Large variations indicate that results can vary around the mean differences. When included in the effect size calculation, these large variations result in smaller effect sizes to reflect uncertainty in outcomes. The reverse is true when variations are small.

Figure 1: Summary of matching analysis
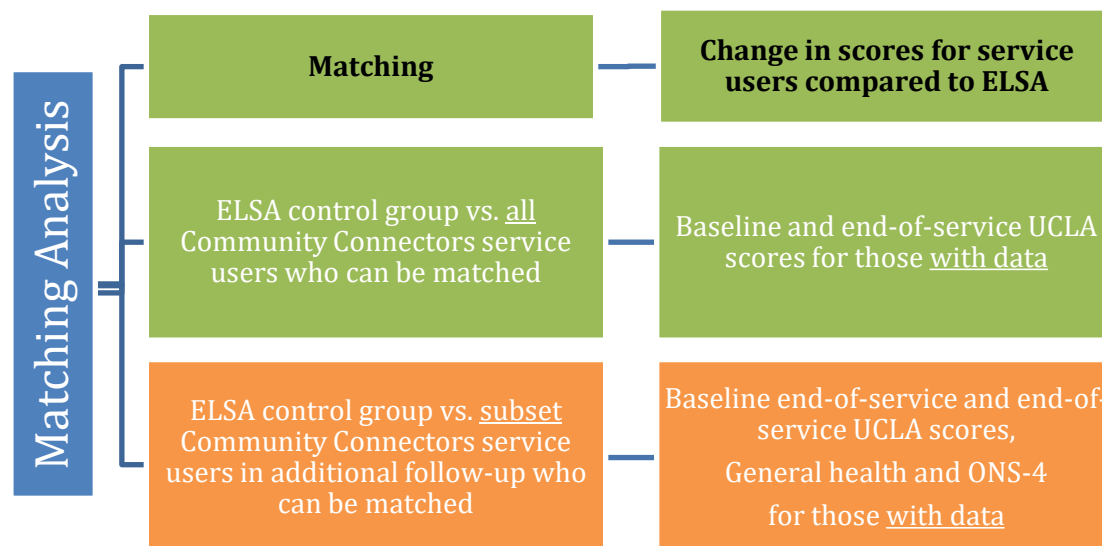
Green – primary comparison; Orange – exploratory analysis

Results

Description of data before matching

Table 1 presents the data across the service users who were accepted and whose status was closed (n=9,037) and the ELSA data with random exclusion of partners who are also part of the ELSA sample (n=6,167). There are statistically significant differences across the two samples across the demographic information (age and gender) and other characteristics such as whether individuals live alone or are in the trigger groups apart from the recently bereaved group. Some of these differences are due to missing information. For example, 22% of the service users do not have gender information. As already noted, other missing data is due to the nature of ELSA where there are no individuals aged below 50 or individuals who would be classified as young new mothers. There are also differences in the UCLA scores. Mean (standard deviation(SD)) scores for service users are 7.3 (1.7) while in ELSA they are 4.2 (1.5) indicating that service users are more lonely on average with 85% of the service users classified as lonely (based on

those with UCLA data) compared to 21% in ELSA. See also Figure 2. However, majority of the accepted service users are missing UCLA data (62%). When focusing on those who had additional data, service users had lower mean wellbeing scores compared to ELSA and where more likely to report poor health (Appendix Table 1).

Table 1: Description of overall samples before matching

		Community Connectors (n=9,037)	ELSA (n=6,167)
		%	%
Gender	Male	33.5	41.9
	Female	66.5	58.1
	Missing	*22.0*	*0*
Ethnicity	White British/ Irish/ Other	85.9	92.1
	Black British/ Other	7.4	1
	Asian British/Other	5.4	1.6
	Other	1.4	0.7
	Missing	*40.5*	*4.5*
Living arrangement	Alone	65.0	34.1
	With Spouse	10.8	65.9
	With Family/friends	17.2	
	Sheltered accommodation	5.3	-
	Nursing/Care home	1.7	-
	Missing	*32.9*	-
Age	18-29	5.6	-
	30-39	6.6	-
	40-49	8.4	-
	50-59	14.9	20.5
	60-69	16.0	37.6
	70-79	19.0	27.4
	80-89	21.6	12.4
	90-99	7.7	2
	100+	0.1	<0.01
	Missing	*34.8*	*0*
	Age (mean, (SD))	66.2 (19.5)	68.3 (10.2)
Trigger Groups	Health issues	53.1 (n=4797)	35.7 (n=2201)
	Mobility issues	26.3 (n=2381)	35 (n=2157)
	Recently bereaved	8.7 (n=789)	7.5 (n=462)
	Recently divorced/ separated	2.4 (n=213)	0.6 (n=40)
	No children	11.6 (n=1049)	13.7 (n=846)
UCLA start scores	UCLA total scores (mean, (SD))	7.3 (1.8)	4.2 (1.5)
	Proportion lonely	84.9 (n=3271)	20.7 (n=1105)
	Missing	*57.4 (n=5184)*	*13.3 (n=821)*
ONS	Happy (mean, (SD))	-	7.4 (2.2)
	Missing	-	*15.7*

		Community Connectors (n=9,037)	ELSA (n=6,167)
		%	%
	Anxious (mean, (SD))	-	1.9 (2.5)
	Missing	-	*15.8*
	Satisfied (mean, (SD))	-	7.3 (2.4)
	Missing	-	*14.8*
	Worthwhile (mean, (SD))	-	7.4 (2.2)
	Missing	-	*16.0*
General health	Excellent	-	11.4
	Very good	-	27.8
	Good	-	32.8
	Fair	-	19.9
	Poor	-	8.1
	Missing	-	*0.05*

SD Standard deviation. Missing % calculated as proportion of total sample in each group

Figure 2: UCLA Loneliness Scores British Red Cross Service Users and ELSA (baseline and end-of-service)
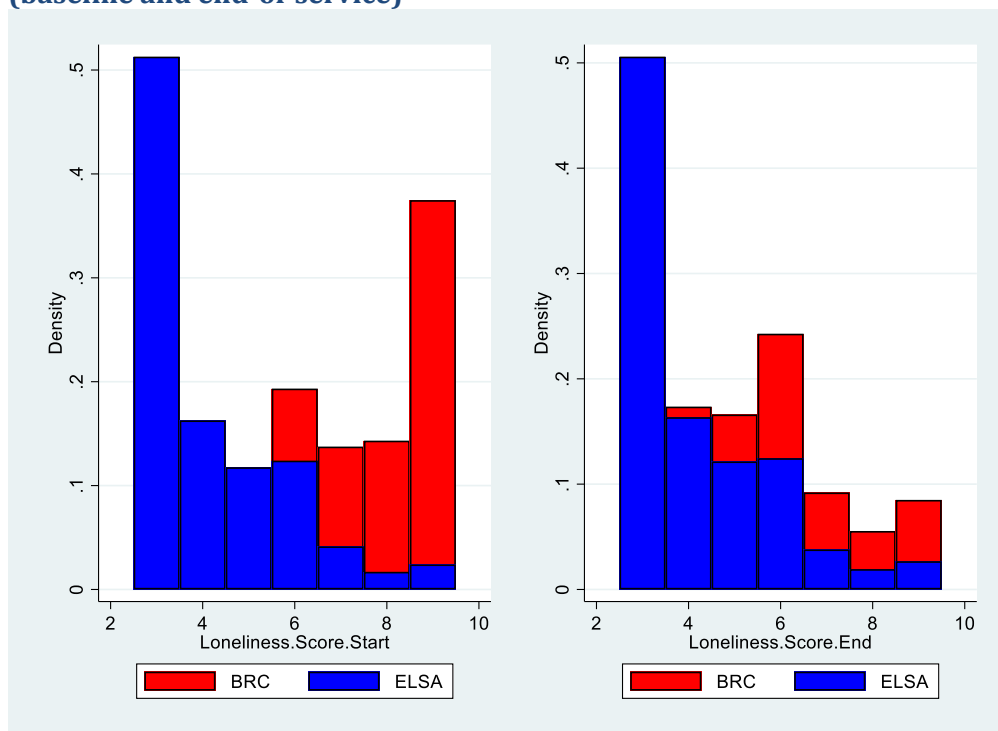
BRC- British Red Cross Service Users ELSA- English Longitudinal Study of Ageing sample.

Missing information

The differences in terms of those with missing data between the two samples persisted even with the larger British Red Cross sample (Table 1). For example, 57% of the service users were missing baseline UCLA data whereas 13% were missing this information in ELSA. When considering those with missing data in baseline UCLA scores, age, gender and living arrangements, there were

statistically significant differences as those who had missing data were also more likely to be those with no problems compared to those without missing data:

- who *did not* have health problems (87% vs. 54%, Chi^2=1300 p<0.001)
- *without* a mobility problem (77% vs 51%, Chi^2=619 p<0.001)
- *were not* recently divorced (71% vs. 49%; Chi^2=53 p<0.001),
- who *were not* bereaved (72% vs 56%; Chi^2=100, p<0.001),
- *with* children living at home (74% vs. 45%, Chi^2 = 392 p<0.001),

There were no statistically significant differences when looking at missing data for new parents. This may indicate a systematic bias of **including data** for those **in the trigger groups**. An assessment of UCLA baseline scores and loneliness for those with data indicates that those in the trigger groups were more likely to be lonely than those who were not in the trigger groups for health issues, divorce and recent bereavement. This has an impact on any analysis as it focuses on the outcomes of those who are worse off either in terms of trigger groups or loneliness rather than looking at everyone who used the service. The bias will make the service look better as a result i.e. if you only have data for those who can show improvements, it shows that the overall level of improvement is better than if the data was not systematically missing some individuals.

When we looked at those who were missing end-of-service UCLA scores, they were still more likely to be those *without* mobility limitations. Those who were not recently bereaved or divorced also reported less missing data but there were no statistically significant differences in the other trigger groups. There was borderline evidence of statistically significant differences in the baseline UCLA scores of those with and without UCLA end-of-service data (7.22 vs 7.33, t_{3882}= -1.97, p=0.048).

The same assessment was undertaken for ELSA data (ELSA had no missing data in age and gender or living arrangements). Those who were missing UCLA scores were *more likely* to have a health issue (17% vs. 11%, Chi^2=34, p<0.001) or a mobility issue (18% vs. 11%, Chi^2=70, p<0.001) and *more likely* to have been bereaved (22% vs. 13%, Chi^2=37, p<0.001) or divorced or separated (25% vs. 13%, Chi^2=5, p<0.05). This the reverse of the service users as those **in the trigger groups** were **more likely to have missing data** in ELSA which is the normal expectation in surveys. Those missing end-of-service UCLA data were also more likely to have health issues, mobility limitations and been recently bereaved compared to those who were not missing this data. There were also differences for those with missing end-of-service UCLA data as they had slightly higher baseline UCLA data (4.31) compared to those who had end-of-service data (4.13) and these differences were statistically significant (p<0.001).

ELSA data only covered England. In the service user data, majority of those in Northern Ireland (85%) and Scotland (78%) had missing data compared to 63% in England and 66% in Wales and these differences were statistically significant. Testing whether loneliness was associated with the country indicated that there were statistically significant differences in loneliness across the 4 countries based on those who had UCLA data with proportions of loneliness ranging from 84% in England to 90% in Northern Ireland. These differences may be due to either

differences in missing data or differences in loneliness across the countries but it is not possible to tell which is the cause.

Assessing matching results

Tables 2 and 3 provide a descriptive analysis of the matched samples. Loneliness was matched across all the matched samples but age and ethnicity were not matched. Trigger group proportions varied across the matched samples and there were poor matches depending on the criteria used to match. The sample size for divorced was small in ELSA so a Fisher's Exact test was also undertaken to test the matching which indicated that there were no statistically significant differences at the 5% level although this was borderline for Group 3 (p=0.055).

Table 2: Description of matched service user and ELSA data

	Match 1 (age, gender, living alone, UCLA) n= 1486		Match 2 (age, gender, living alone, health, UCLA) n= 1384		Match 3 (age, gender, living alone, health, mobility, UCLA) n= 1304		Match 4 (age, gender, living alone, UCLA) n= 1226		Match 5 (age, gender, living alone, UCLA questions) n= 556	
	BRC n=743	ELSA n=743	BRC n=692	ELSA n=692	BRC n=652	ELSA n=652	BRC n=613	ELSA n=613	BRC n=278	ELSA n=278
	%	%	%	%	%	%	%	%	%	%
Female	*65.1*	*65.1*	*64.9*	*64.9*	65.0	65.0	66.4	66.4	67.2	67.2
Living Alone	*59.4*	*59.4*	*59.5*	*59.4*	60.3	60.3	59.5	59.5	60.2	60.2
Age										
50-59	16	16*	14.2	14.2*	14.4	14.4*	15	15*	13.3	13.3*
60-69	26.5	27.7	26.9	28.2	27.6	29	27.7	28.2	28.9	29.6
70-79	27.9	26.9	27.6	28.2	27.1	27.3	28.4	29.2	27.4	28.3
80-89	22.2	26.8	23.7	27.2	22.5	26.8	21.7	25.3	23	27.4
90-99	7.4	2.6	7.7	2.3	8.3	2.5	7.2	2.3	7.4	1.3
Age (mean, (SD))	*72.1 (11.7)*	*71.6 (11.2)*	*72.5 (11.6)*	*72.2 (11.0)*	*72.4 (11.7)*	*71.9 (11.0)*	*72.4 (12.0)*	*72.2 (11.3)*	*73.1 (12.1)*	*72.8 (11.2)*
White	88.8	97.2*	88.0	97.7*	87.7	97.4*	88.5	96.6*	89.7	97.4*
Health	76.2	45.8*	*70.5*	*70.5*	70.4	70.4	74.6	48.3*	69.1	69.1
Mobility	47.2	43.2	46.5	59.5*	*54.9*	*54.9*	47.1	48.9	44.8	60.6*
Bereaved	13.7	12.9	13.0	11.4	14.9	12.3	12.2	11.6	12.8	13.1
Divorced	3.1	1.2*	2.9	1.4	2.3	1.2	3.3	1.1*	3.9	1.5*
No children	21.5	19.9	20.2	18.2	21.5	18.9	20.9	18.0	21.9	18.3
UCLA baseline mean, SD)	6.3 (1.7)	6.1 (1.8)	6.2 (1.8)	6.1 (1.8)	6.2 (1.8)	6.1 (1.8)	*6.2 (1.8)*	*6.2 (1.8)*	6.2 (1.8)	6.2 (1.8)
Proportion lonely start	70	63.1*	67.6	62.4*	67.8	62.6*	*69.3*	*69.3*	67.8	67.8

Variables used in matching are in italics

*Statistically significant differences between BRC and ELSA sample (p<0.05). Note that the numbers for those who are divorced are small therefore the statistical test may not be accurate

Table 3: Description of matched service user and ELSA data for additional sample

	Match 1 (age, gender, living alone, UCLA) n= 252		Match 2 (age, gender, living alone, health, UCLA) n= 246	
	BRC n=126	ELSA n=126	BRC n=123	ELSA n=123
	%	%	%	%
Female	*75.4*	*75.4*	*74.8*	*74.8*
Living Alone	*70.6*	*70.6*	*86.0*	*86.0*
Age				
50-59	19.8	19.8	18.7	18.7
60-69	19.8	22.2	20.3	22.8
70-79	27.8	27.8	28.5	29.3
80-89	26.2	24.6	25.2	26.8
90-99	6.3	5.6	7.3	2.4
Age (mean, (SD))	*72.2 (12.4)*	*72.4 (12.3)*	*72.4 (12.5)*	*72.1 (11.5)*
White	93.7	97.6	94.4	94.3
Health	80.2	57.1*	*80.5*	*80.5*
Mobility	51.6	54.0	52.8	58.5
Bereaved	20.6	12.7	21.1	12.2
Divorced	2.4	0.8	2.4	1.6
No children	23.0	20.8	25.2	18.2
UCLA baseline (mean (SD))	7.3 (1.6)	7.1 (1.8)	7.2 (1.6)	7.1 (1.7)
Proportion lonely start	87.3	78.6	87.0	81.3
ONS happy (mean (SD))	4.3 (2.7)	5.6 (3.0)*	4.3 (2.6)	5.4 (2.6)*
ONS anxious (mean (SD))	4.2 (2.3)	3.7 (3.2)*	4.6 (30)	3.5 (3.1)*
ONS satisfied (mean (SD))	4.2 (2.3)	4.8 (2.8)*	4.2 (2.3)	4.7 (2.6)*
ONS worthwhile (mean (SD))	4.5 (2.6)	5.5 (2.8)*	4.5 (2.7)	5.3 (2.6)*
General health:				
Excellent	0	4*	0	2.4*
Very good	4	18.3	4.9	13.8
Good	15.2	33.3	14.8	33.3
Fair	44.8	27.8	45.9	27.6
Poor	36	16.7	34.4	22.8

Note: ONS and health measures have smaller sample sizes compared to UCLA.

Change in raw loneliness scores for service users compared to their ELSA matches

Matching analysis relied on regression analysis. Results from the regression analysis are shown in Table 4 and Tables 5 (a to g).

Table 4: Change in raw loneliness scores for service users compared to ELSA

Match 1

Service user	-0.7***	-0.7***	-0.7***	-0.7***	-0.7***	-0.7***
	(-0.8 - -0.6)	(-0.9 - -0.6)	(-0.8 - -0.6)	(-0.8 - -0.5)	(-0.8 - -0.6)	(-0.8 - -0.5)
Health issues		0.2**				
		(0.0 - 0.3)				
Mobility limits			0.1*			
			(-0.0 - 0.3)			
Divorced				-0.2		
				(-0.7 - 0.2)		
Bereaved					0.1	
					(-0.1 - 0.3)	
No children						-0.0
						(-0.2 - 0.1)
Constant	2.2***	2.1***	2.2***	2.2***	2.2***	2.2***
	(1.6 - 2.8)	(1.5 - 2.8)	(1.6 - 2.8)	(1.6 - 2.8)	(1.6 - 2.8)	(1.6 - 2.8)
Observations	1,486	1,486	1,486	1,486	1,486	1,482
R-squared	0.4	0.4	0.4	0.4	0.4	0.4

Match 2

Service user	-0.8***	-0.8***	-0.8***	-0.7***	-0.8***	-0.7***
	(-0.9 - -0.6)	(-0.9 - -0.6)	(-0.9 - -0.6)	(-0.9 - -0.6)	(-0.9 - -0.6)	(-0.9 - -0.6)
Health issues		0.0				
		(-0.2 - 0.2)				
Mobility limits			0.0			
			(-0.1 - 0.2)			
Divorced				-0.4		
				(-0.9 - 0.1)		
Bereaved					0.0	
					(-0.2 - 0.3)	
No children						-0.1
						(-0.3 - 0.0)
Constant	2.3***	2.2***	2.3***	2.3***	2.3***	2.3***
	(1.6 - 2.9)	(1.5 - 2.9)	(1.6 - 2.9)	(1.6 - 3.0)	(1.6 - 2.9)	(1.6 - 3.0)
Observations	1,384	1,384	1,384	1,384	1,384	1,380
R-squared	0.4	0.4	0.4	0.4	0.4	0.4

Match 3

Service user	-0.8***	-0.8***	-0.8***	-0.7***	-0.8***	-0.7***
	(-0.9 - -0.6)	(-0.9 - -0.6)	(-0.9 - -0.6)	(-0.9 - -0.6)	(-0.9 - -0.6)	(-0.9 - -0.6)
Health issues		0.1				
		(-0.0 - 0.3)				
Mobility limits			0.0			
			(-0.1 - 0.2)			
Divorced				-0.7**		
				(-1.3 - -0.2)		
Bereaved					-0.0	
					(-0.2 - 0.2)	
No children						-0.1
						(-0.3 - 0.1)
Constant	2.5***	2.3***	2.5***	2.6***	2.5***	2.5***
	(1.8 - 3.2)	(1.6 - 3.0)	(1.8 - 3.2)	(1.9 - 3.2)	(1.8 - 3.2)	(1.9 - 3.2)
Observations	1,304	1,304	1,304	1,304	1,304	1,299

R-squared	0.4	0.4	0.4	0.4	0.4	0.4

Match 4

Service user	-0.8*** (-0.9 - -0.6)	-0.8*** (-1.0 - -0.6)	-0.7*** (-0.9 - -0.6)	-0.7*** (-0.9 - -0.6)	-0.8*** (-0.9 - -0.6)	-0.7*** (-0.9 - -0.6)
Health issues		0.2** (0.0 - 0.4)				
Mobility limits			0.2** (0.0 - 0.3)			
Divorced				-0.4 (-1.0 - 0.1)		
Bereaved					0.1 (-0.2 - 0.3)	
No children						-0.1 (-0.3 - 0.1)
Constant	2.0*** (1.3 - 2.7)	1.9*** (1.2 - 2.6)	2.0*** (1.4 - 2.7)	2.0*** (1.3 - 2.7)	2.0*** (1.3 - 2.7)	2.0*** (1.3 - 2.7)
Observations	1,226	1,226	1,226	1,226	1,226	1,223
R-squared	0.4	0.4	0.4	0.4	0.4	0.4

Match 5

Service user	-0.9*** (-1.0 - -0.7)	-0.9*** (-1.0 - -0.7)	-0.9*** (-1.0 - -0.7)	-0.9*** (-1.0 - -0.7)	-0.9*** (-1.0 - -0.7)	-0.9*** (-1.0 - -0.7)
Health issues		0.1 (-0.1 - 0.3)				
Mobility limits			0.1 (-0.1 - 0.3)			
Divorced				-0.4 (-0.9 - 0.1)		
Bereaved					0.1 (-0.2 - 0.3)	
No children						-0.1 (-0.3 - 0.1)
Constant	2.8*** (2.1 - 3.5)	2.7*** (1.9 - 3.5)	2.8*** (2.0 - 3.5)	2.8*** (2.1 - 3.6)	2.8*** (2.1 - 3.5)	2.8*** (2.1 - 3.6)
Observations	1,080	1,080	1,080	1,080	1,080	1,075
R-squared	0.4	0.4	0.4	0.4	0.4	0.4

Match 6

Service user	-0.7*** (-1.0 - -0.3)	-0.6*** (-1.0 - -0.3)	-0.7*** (-1.0 - -0.3)	-0.7*** (-1.0 - -0.3)	-0.7*** (-1.0 - -0.3)	-0.7*** (-1.0 - -0.3)
Health issues		-0.1 (-0.5 - 0.3)				
Mobility limits			0.2 (-0.2 - 0.6)			
Divorced				-0.6 (-2.1 - 0.9)		
Bereaved					-0.1 (-0.6 - 0.4)	
No children						-0.1 (-0.5 - 0.4)
Constant	2.4*** (0.7 - 4.1)	2.5*** (0.8 - 4.1)	2.4*** (0.7 - 4.1)	2.5*** (0.8 - 4.1)	2.4*** (0.7 - 4.1)	2.4*** (0.7 - 4.1)

Observations	252	252	252	252	252	251
R-squared	0.4	0.4	0.4	0.4	0.4	0.4

Match 7						
Service user	-0.8*** (-1.2 - -0.4)	-0.8*** (-1.2 - -0.4)	-0.8*** (-1.2 - -0.4)	-0.8*** (-1.2 - -0.4)	-0.8*** (-1.1 - -0.4)	-0.8*** (-1.2 - -0.4)
Health issues		0.0 (-0.4 - 0.5)				
Mobility limits			0.1 (-0.3 - 0.5)			
Divorced				-0.1 (-1.4 - 1.2)		
Bereaved					-0.3 (-0.8 - 0.2)	
No children						0.1 (-0.4 - 0.5)
Constant	2.8*** (1.2 - 4.5)	2.8*** (1.0 - 4.5)	2.8*** (1.2 - 4.5)	2.8*** (1.2 - 4.5)	2.7*** (1.1 - 4.4)	2.7*** (1.1 - 4.4)
Observations	246	246	246	246	246	244
R-squared	0.4	0.4	0.4	0.4	0.4	0.3

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Service users: shows difference in change in UCLA for the service users compared to their ELSA match

Table 5a: Change in raw loneliness scores for service users compared to ELSA by trigger groups

Match1

	(1)	(2)	(3)	(4)	(5)
ELSA with health issues	0.2* (-0.0 - 0.4)				
Service user no health issues	-0.7*** (-0.9 - -0.4)				
Service user with health issues	-0.6*** (-0.7 - -0.4)				
ELSA with mobility limits		0.2** (0.0 - 0.4)			
Service user no mobility limits		-0.6*** (-0.8 - -0.4)			
Service user with mobility limits		-0.6*** (-0.8 - -0.4)			
ELSA divorced			0.1 (-0.8 - 1.0)		
Service user not divorced			-0.7*** (-0.8 - -0.5)		
Service user divorced			-1.0*** (-1.6 - -0.5)		
ELSA bereaved				-0.0 (-0.3 - 0.2)	
Service user not bereaved				-0.7*** (-0.9 - -0.6)	
Service user bereaved				-0.5*** (-0.8 - -0.2)	
ELSA no child					0.2 (-0.0 - 0.4)
Service user with child					-0.6*** (-0.7 - -0.4)
Service user with no child					-0.8*** (-1.1 - -0.6)
Constant	2.2*** (1.5 - 2.8)	2.2*** (1.6 - 2.9)	2.2*** (1.6 - 2.8)	2.2*** (1.6 - 2.8)	2.0*** (1.4 - 2.7)
Observations	1,486	1,486	1,486	1,486	1,482
R-squared	0.4	0.4	0.4	0.4	0.4

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Each group compared to ELSA sample who are not in the relevant trigger group

Table 5b: Change in raw loneliness scores for service users compared to ELSA by trigger groups

Match2					
ELSA with health issues	0.1 (-0.1 - 0.3)				
Service user no health issues	-0.6*** (-0.9 - -0.4)				
Service user with health issues	-0.7*** (-0.9 - -0.5)				
ELSA with mobility limits		0.1 (-0.1 - 0.3)			
Service user no mobility limits		-0.6*** (-0.9 - -0.4)			
Service user with mobility limits		-0.7*** (-1.0 - -0.5)			
ELSA divorced			-0.2 (-1.1 - 0.7)		
Service user not divorced			-0.7*** (-0.9 - -0.6)		
Service user divorced			-1.2*** (-1.9 - -0.6)		
ELSA bereaved				0.0 (-0.3 - 0.3)	
Service user not bereaved				-0.8*** (-0.9 - -0.6)	
Service user bereaved				-0.7*** (-1.0 - -0.4)	
ELSA no child					0.1 (-0.1 - 0.4)
Service user with child					-0.6*** (-0.8 - -0.5)
Service user with no child					-1.0*** (-1.3 - -0.8)
Constant	2.2*** (1.5 - 2.9)	2.2*** (1.5 - 2.9)	2.3*** (1.6 - 3.0)	2.3*** (1.6 - 2.9)	2.2*** (1.5 - 2.8)
Observations	1,384	1,384	1,384	1,384	1,380
R-squared	0.4	0.4	0.4	0.4	0.4

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Each group compared to ELSA sample who are not in the relevant trigger group

Table 5c: Change in raw loneliness scores for service users compared to ELSA by trigger groups

Match3					
ELSA with health issues	0.3*** (0.1 - 0.6)				
Service user no health issues	-0.5*** (-0.8 - -0.2)				
Service user with health issues	-0.5*** (-0.8 - -0.3)				
ELSA with mobility limits		0.0 (-0.2 - 0.3)			
Service user no mobility limits		-0.7*** (-1.0 - -0.5)			
Service user with mobility limits		-0.7*** (-0.9 - -0.5)			
ELSA divorced			-0.4 (-1.4 - 0.6)		
Service user not divorced			-0.7*** (-0.9 - -0.6)		
Service user divorced			-1.6*** (-2.4 - -0.9)		
ELSA bereaved				-0.1 (-0.4 - 0.3)	
Service user not bereaved				-0.8*** (-0.9 - -0.6)	
Service user bereaved				-0.7*** (-1.0 - -0.4)	
ELSA no child					0.2 (-0.1 - 0.5)
Service user with child					-0.6*** (-0.8 - -0.5)
Service user with no child					-1.0*** (-1.3 - -0.7)
Constant	2.2*** (1.5 - 2.9)	2.5*** (1.8 - 3.2)	2.6*** (1.9 - 3.2)	2.5*** (1.8 - 3.2)	2.4*** (1.7 - 3.1)
Observations	1,304	1,304	1,304	1,304	1,299
R-squared	0.4	0.4	0.4	0.4	0.4

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Each group compared to ELSA sample who are not in the relevant trigger group

Table 5d: Change in raw loneliness scores for service users compared to ELSA by trigger groups

	Match4				
ELSA with health issues	0.4*** (0.2 - 0.6)				
Service user no health issues	-0.5*** (-0.8 - -0.3)				
Service user with health issues	-0.6*** (-0.8 - -0.4)				
ELSA with mobility limits		0.3*** (0.1 - 0.5)			
Service user no mobility limits		-0.6*** (-0.8 - -0.4)			
Service user with mobility limits		-0.6*** (-0.8 - -0.3)			
ELSA divorced			0.3 (-0.8 - 1.3)		
Service user not divorced			-0.7*** (-0.9 - -0.6)		
Service user divorced			-1.4*** (-2.0 - -0.8)		
ELSA bereaved				-0.1 (-0.5 - 0.2)	
Service user not bereaved				-0.8*** (-1.0 - -0.6)	
Service user bereaved				-0.5*** (-0.9 - -0.2)	
ELSA no child					0.1 (-0.2 - 0.4)
Service user with child					-0.7*** (-0.8 - -0.5)
Service user with no child					-0.9*** (-1.2 - -0.6)
Constant	2.0*** (1.3 - 2.7)	2.0*** (1.3 - 2.7)	2.0*** (1.3 - 2.7)	2.0*** (1.3 - 2.7)	1.9*** (1.2 - 2.6)
Observations	1,226	1,226	1,226	1,226	1,223
R-squared	0.4	0.4	0.4	0.4	0.4

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$
Each group compared to ELSA sample who are not in the relevant trigger group

Table 5e: Change in raw loneliness scores for service users compared to ELSA by trigger groups

	Match5				
ELSA with health issues	0.2* (-0.0 - 0.5)				
Service user no health issues	-0.7*** (-1.0 - -0.4)				
Service user with health issues	-0.7*** (-1.0 - -0.5)				
ELSA with mobility limits		0.3** (0.0 - 0.5)			
Service user no mobility limits		-0.7*** (-0.9 - -0.4)			
Service user with mobility limits		-0.7*** (-1.0 - -0.5)			
ELSA divorced			-0.1 (-1.1 - 0.8)		
Service user not divorced			-0.9*** (-1.0 - -0.7)		
Service user divorced			-1.4*** (-2.0 - -0.8)		
ELSA bereaved				-0.0 (-0.4 - 0.3)	
Service user not bereaved				-0.9*** (-1.1 - -0.7)	
Service user bereaved				-0.8*** (-1.1 - -0.4)	
ELSA no child					0.1 (-0.2 - 0.4)
Service user with child					-0.8*** (-1.0 - -0.6)
Service user with no child					-1.0*** (-1.3 - -0.7)
Constant	2.6*** (1.9 - 3.4)	2.7*** (1.9 - 3.4)	2.8*** (2.1 - 3.6)	2.8*** (2.1 - 3.5)	2.7*** (2.0 - 3.5)
Observations	1,080	1,080	1,080	1,080	1,075
R-squared	0.4	0.4	0.4	0.4	0.4

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Each group compared to ELSA sample who are not in the relevant trigger group

Table 5f: Change in raw loneliness scores for service users compared to ELSA by trigger groups

Match6					
ELSA with health issues	0.0				
	(-0.5 - 0.5)				
Service user no health issues	-0.4				
	(-1.2 - 0.3)				
Service user with health issues	-0.7***				
	(-1.2 - -0.2)				
ELSA with mobility limits		0.4			
		(-0.2 - 0.9)			
Service user no mobility limits		-0.5*			
		(-1.1 - 0.0)			
Service user with mobility limits		-0.4			
		(-1.0 - 0.1)			
ELSA divorced			-2.7*		
			(-5.6 - 0.3)		
Service user not divorced			-0.7***		
			(-1.1 - -0.3)		
Service user divorced			-0.7		
			(-2.4 - 1.1)		
ELSA bereaved				-0.0	
				(-0.8 - 0.8)	
Service user not bereaved				-0.6***	
				(-1.1 - -0.2)	
Service user bereaved				-0.8**	
				(-1.4 - -0.1)	
ELSA no child					-0.1
					(-0.8 - 0.6)
Service user with child					-0.7***
					(-1.1 - -0.3)
Service user with no child					-0.7**
					(-1.3 - -0.1)
Constant	2.5***	2.4***	2.5***	2.4***	2.4***
	(0.8 - 4.2)	(0.8 - 4.1)	(0.8 - 4.1)	(0.7 - 4.1)	(0.7 - 4.1)
Observations	252	252	252	252	251
R-squared	0.4	0.4	0.4	0.4	0.4

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Each group compared to ELSA sample who are not in the relevant trigger group

Table 5g: Change in raw loneliness scores for service users compared to ELSA by trigger groups

	Match7				
ELSA with health issues	0.5 (-0.1 - 1.2)				
Service user no health issues	0.0 (-0.8 - 0.8)				
Service user with health issues	-0.5 (-1.1 - 0.2)				
ELSA with mobility limits		0.2 (-0.3 - 0.8)			
Service user no mobility limits		-0.6** (-1.2 - -0.0)			
Service user with mobility limits		-0.7** (-1.2 - -0.2)			
ELSA divorced			-0.6 (-2.6 - 1.5)		
Service user not divorced			-0.8*** (-1.2 - -0.4)		
Service user divorced			-0.6 (-2.3 - 1.1)		
ELSA bereaved				-0.6 (-1.4 - 0.2)	
Service user not bereaved				-0.8*** (-1.2 - -0.4)	
Service user bereaved				-1.0*** (-1.6 - -0.3)	
ELSA no child					-0.0 (-0.7 - 0.6)
Service user with child					-0.8*** (-1.2 - -0.4)
Service user with no child					-0.7** (-1.3 - -0.1)
Constant	2.5*** (0.7 - 4.2)	2.8*** (1.2 - 4.4)	2.8*** (1.2 - 4.5)	2.7*** (1.1 - 4.4)	2.8*** (1.1 - 4.4)
Observations	246	246	246	246	244
R-squared	0.4	0.4	0.4	0.4	0.3

Controlling for: age, baseline UCLA scores; 95% CI in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Each group compared to ELSA sample who are not in the relevant trigger group

Change in raw loneliness scores for service users compared to their ELSA matches for the additional follow-up

To allow comparison between changes in loneliness and changes in wellbeing, we used effect sizes. Values between 0.2 and 0.5, 0.5 to 0.8, and 0.8 or more denote ranges containing small, medium, and large effect sizes, respectively according to Cohen's criteria (Cohen, 1992).

- ✓ UCLA -0.45 [95% CI: -0.70 to -0.20] for group 1 and -0.56 [95% CI: -0.79 to -0.28]. This effect size is smaller (-0.39 to -0.59 depending on wellbeing measure) and no longer statistically significant if focus is only on those with wellbeing measures
- ✓ ONS happiness 0.47 [95%: -0.12 to 0.82] for group 1 and 0.40 [95% CI: 0.05 to 0.76] for group 2,
- ✓ ONS anxious -0.24 [95%: -0.59 to 0.11] for group 1 and 0.26 [95% CI: -0.59 to 0.12] for group 2,
- ✓ ONS satisfied 0.63 [95%: 0.27 to 0.98] for group 1 and 0.53 [95% CI: 0.18 to 89] for group 2,
- ✓ ONS worthwhile activities 0.67 [95%: 0.30 to 1.01] for group 1 and 0.62 [95% CI: 0.25 to 0.98] for group 2,

The effect size was small to medium, negative and statistically significant for the loneliness score which reflects the earlier findings that show improvements in the loneliness scores, with a smaller effect size when focus was on those with well-being data (n=46 & 48).

The effect sizes for two wellbeing measures: satisfaction and worthwhile were lower in this analysis compared to the previous analysis. The wellbeing measures had medium, positive effect sizes for satisfaction and worthwhile activities compared to the effect sizes for the loneliness scores, even when comparing with everyone who had UCLA data in the matching rather than just those who had wellbeing measures. Happiness was the same magnitude as the loneliness scores while for ONS anxious effect sizes were small and not statistically significant.

Changes in health from baseline to end-of-service in additional follow-up

We also assessed changes in health for those with data in the additional sample. Effect sizes for change were 0.19 [95% CI: -0.14 to 0.53] for group 1 (n=47) and 0.09 [95% CI: -0.25 to 0.43] for group 2 (n=45). This indicates that there was little difference in changes in health between the service users and their matched samples. Again, the small sample size means the results should be treated with caution.

Summary

When the change in scores from baseline to end-of-service was assessed, service users were more likely to have improved at end-of-service and these improvements were statistically different from their ELSA matches. These improvements in raw scores also translated into changes in loneliness status and less deterioration for service users at end-of-service.

There are a number of limitations that need to be taken into account when considering these results. The small sample size which become smaller when matching is undertaken has an impact on the generalisability of the results. Other limitations are related to the matching data – ELSA and the information available to match.

We used data from 2014/15 to provide a start sample for ELSA which is data from 3-4 years ago in order to provide a follow-up to compare to the end-of-service for the service users sample. There may be current factors that have an influence on British Red Cross service users that may not have been an issue 3 to 4 years ago. These are unobservable factors that cannot be identified due to the limited data in the routine data for service users. In the overall service user data, median length of support service users was 6 weeks but there was considerable variation. This shorter length means that time gap between the UCLAs in the service user data is smaller, compared to the gap in the two waves of ELSA data.

ELSA data was only from England whereas the service user data came from England, Wales, Scotland and Northern Ireland. There was some evidence that those in Northern Ireland were more lonely than the other countries and this may be related to unobservable factors or missing data. Finally ELSA had a longer follow-up (considered the end-of service) than the service user data which may influence the results e.g. the shorter gap in the service user data may result in inflated gains relative to ELSA. This could have been partly informed by comparing those in the additional follow-up to a matched sample. However, as has been demonstrated, matching resulted in smaller numbers at end-of-service and as only n=32 are included in the largest match group.

The limited information available in the routine data also means that there may be other characteristics which we need to match on but which are not available. However, matching on different characteristics gives very similar results which may be an indicator of robustness of the findings. This only applies for the main analysis. The additional follow-up sample is different and smaller, therefore matching analysis is exploratory for this group.

Taking into account these limitations, the matched comparator analysis indicates that service users are more likely to be lonely compared to those in the general population for those who have data. There is evidence of improvements for those who remain in the service and that a larger proportion improve compared to matched samples from those in the general population. Routine data is useful for supporting this type of analysis but missing data that is not missing at random may limit generalisability.