



# SOCIAL ISOLATION AND LONELINESS IN THE UK

**With a focus on the  
use of technology to  
tackle these conditions**

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# INTRODUCTION

Loneliness and social isolation are complex conditions which, until recently, have remained relatively under-researched. Where research has been conducted, it has almost exclusively focused on the prevalence of the conditions on older demographics, and has largely ignored the development of the conditions amongst younger people.

However, both social isolation and loneliness are starting to receive increased attention from local authorities, health and social care providers and third-sector organisations due to growing evidence around the negative impacts they have on health and wellbeing. Research has shown that, in terms of negative health outcomes, lacking social connections is comparable to smoking 15 cigarettes a day, and has worse health outcomes than risk factors such as obesity and physical inactivity. It has been calculated that loneliness increases the likelihood of mortality by 26% in older people. (1)

This report aims to provide an overview of the social isolation and loneliness landscape in the UK, taking into account the factors that contribute to the development of the conditions, those who are commonly affected, the impacts of the conditions on individuals and public services, and the approaches and interventions that are currently used to address them. In particular, this report seeks to highlight the innovative uses of technology in addressing loneliness and isolation, as these are expected to act as key enablers in the future. Wherever possible, local and international best practice case-studies have been included to illustrate the progress being made in this domain. Finally, this document touches upon the challenges faced when trying to finance interventions aiming to combat social isolation and loneliness, and introduces an outcome-based financing model which could facilitate the delivery of more innovative solutions.

# WHAT IS MEANT BY THE TERMS SOCIAL ISOLATION AND LONELINESS?

## 2.1 DEFINITIONS

The terms social isolation and loneliness are often used interchangeably, however there are several important distinctions to be made. Definitions of each are becoming standardised with a number of research reports and evidence reviews using the following definitions:

**Social isolation** is defined as 'an objective state determined by the quantity of social relationships and contacts between individuals, across groups and communities.' (2) Social isolation can be caused physically through distance or disability, or emotionally through social stigmas or traumatic events.

Meanwhile **loneliness** is defined as 'a subjective state based on a person's emotional perception of the number and/or quality of social connections they need compared to what is currently being experienced.' (2) Feelings of loneliness are not just caused by physical isolation and lack of companionship, but also through a lack of useful role in society.

Therefore, it is possible for an individual to be socially isolated without feeling lonely, or conversely feel lonely without being socially isolated. Nevertheless, the conditions are often found together due to the similar factors that contribute to the development of the conditions.

# WHY IS THERE A NEED TO TACKLE SOCIAL ISOLATION AND LONELINESS?

## 3.1 IDENTIFICATION OF IMPACTS

There is a growing body of research that identifies and quantifies the impact of social isolation and loneliness on individuals and the wider economy. There is clear evidence that social isolation and loneliness are associated with negative health outcomes, which in turn places increased stress on local health and social care services. Specific impacts of social isolation and loneliness include:

- **More frequent use of public services due to lack of support networks**

Individuals that are socially isolated are:

- 1.8 times more likely to visit a GP
- 1.6 times more likely to visit A&E
- 1.3 times more likely to have emergency admissions
- 3.5 times more likely to enter local authority funded residential care. (3)

- **Increased likelihood of developing certain health conditions**

Research by Holt-Lunstad states that '*weak social connections carry a health risk that is more harmful than not exercising, twice as harmful as obesity, and is comparable to smoking 15 cigarettes a day or being an alcoholic.*' (1) Specifically, socially isolated people are:

- 3.4 times more likely to suffer depression
- 1.9 times more likely to develop dementia in the following 15 years
- 2 to 3 times more likely to be physically inactive, which may result in a 7% increased likelihood of developing diabetes, an 8% increased likelihood of suffering a stroke and a 14% likelihood of developing coronary heart disease. (3)

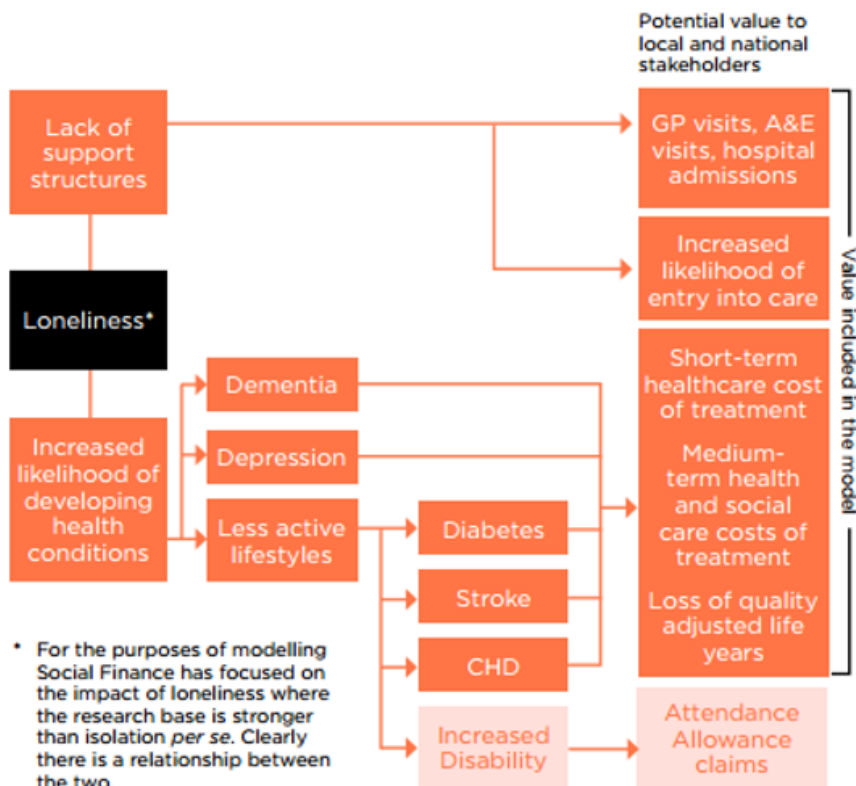
• **Increased mortality**

Loneliness has been found to increase the likelihood of mortality by 26%, and in the case of an emergency, any social contact is associated with increased survival rates. This is explained well in a report that came out of the Marmot Review, which states:

*those who have strong social ties to die prematurely. Social networks have a larger impact on the risk of mortality than on the risk of developing disease, in the sense it is not so much that social networks stop you from getting ill, but that they help you to recover when you get ill.’ (4)*

*‘Individuals who are socially isolated are between two and five times more likely than*

*The impact of loneliness on public sector resources (3)*



### 3.2 QUANTIFICATION OF IMPACTS

In their June 2013 report, The Second Half Foundation quantified some of the potential cost benefits associated with tackling social isolation and loneliness. The table produced has been included below:

HEALTH ISSUES ARISING FROM ISOLATION	COST PER UNIT
<p><b>Cost of dementia or cognitive decline</b> ‘People with a high degree of loneliness are twice as likely to develop Alzheimer’s than people with a low degree of loneliness’ (BBC, 2007) ‘Half of all older people consider the television as their main form of company’ (Age UK ‘Combating Loneliness’)</p>	<p>£2500 -- annual NHS costs of treating one patient with mild dementia in the community (King’s Fund, 2008) The service costs associated with dementia are far higher than all other conditions put together, making up 66% of all mental health service costs. (King’s Fund, 2008)</p>
<p><b>Re-admission into hospital/ Emergency Hospital Admissions</b>                      Around one in three of all hospital admissions in England are emergencies, costing the NHS some £11 billion a year - one of the most expensive areas of the health service. (Nuffield Report, 2011) In one study of over 70s, patients who lived alone were 60% more likely to visit the emergency department than those who lived solely with their spouse (Hastings et al., 2008 p. 458)</p>	<p>Total cost £563 million - per unit £ 4,021 Rise of elderly re-admission increased 88% 2000-09/10 (Age UK, 2013) “Older people account for 40 percent i.e. £563 million of total spend of £1.42 billion. The rate in the most deprived areas is more than twice the rate in the least deprived areas in England” (The King’s Fund April, 2012)</p>
<p><b>Mental Health Costs and Reducing visits to GPs</b>                      Today, the annual economic cost of mental illness in the UK is £70 Billion—equal to the entire National Health Budget (Ruby Wax, Sane New World, 2013). In 2003 (Thomas), the estimated total cost of adult depression was £9 billion of which £370 million represents direct treatment costs</p>	<p>‘Loneliness is strongly correlated with mental health costs; the probability of having a mental health need is 47 percentage points higher among populations of older people who are lonely’ (Social Finance, 2013)</p>
<p><b>Preventing an Integrated Care case review</b></p>	<p>£276 – INWL QIPP Team</p>
<p><b>Lowering blood pressure and subsequently risk of stroke</b>                      A recent study has positively correlated social isolation with blood pressure as well as C-reactive protein and fibrinogen levels which increases risk of heart disease and stroke (Shankhar et al., 2011)</p>	<p>£1628 – applicable 2008/09 PbR tariff for a Transitory Ischemic Attack (TIA) (Alzheimer Society, 2009)</p>
<p><b>Reducing length of hospital stays</b></p>	<p>Each hospital bed costs £260 per day (Age UK, 2013)</p>

There has been a large and avoidable rise in the number of overnight hospital stays, which cost the NHS £330m annually. (Nuffield Report, 2011) In 2005, one in ten people aged over 50 had stayed in hospital as an inpatient in the previous 12 months (ONS, 2005).

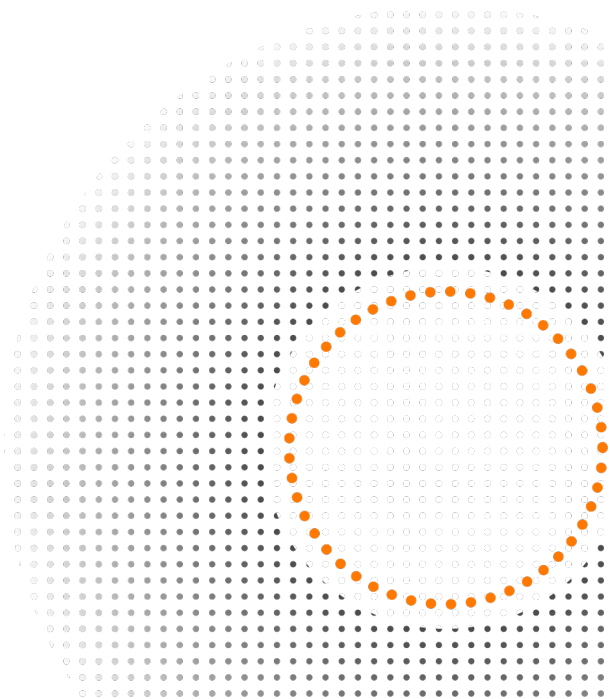
The national average length of stay in bed for those over 65 is 9.5 days (King's Fund, 2012)

**Benefits of improved physical health** Reducing number of falls among the elderly. One third of all people aged over 65 fall each year =3 million (Age UK, 2013). Age UK says evidence has shown that if elderly people take part in exercise programmes specifically designed to improve strength and balance, the risk of falls can be cut by up to 55%. (BBC, 2010) Physical inactivity costs £8.2 billion annually (NICE, 2008) Physical activity has been shown to reduce risks for cardiovascular disease, coronary disease and high blood pressure. A recent study has demonstrated that people over 70 who exercise regularly show less brain shrinkage over a three-year period, which causes problems with memory and thinking (Age UK, 2012) Another study spanning 10 years revealed that women aged 75 or over and classed as active had a death rate 68% lower than those classed as least active (Sherman et al., 1994)

Falls of the Elderly can cost the NHS £4.6mn per day (Age UK, 2013) The combined cost of hospitalization and social care for hip fractures (most of which are due to falls) is £2 billion a year or £6 million a day (Age UK, 2013) Estimated cost per hip fracture patient is now routinely set at £28,000 (Age UK, 2013) The only UK study cited showed that twice-weekly exercise classes led by qualified instructors are cost effective in the UK with an incremental savings cost per QALY of £12,100 (95% CI = £5,800 to £61,400) (NICE, October 2008)

(5)

Based on the impacts and cost benefits described above, it is clear there are strong economic and health-based business cases for tackling loneliness and social isolation. Tackling these issues not only alleviates suffering and improves quality of life for affected individuals, but also delivers wider benefits to communities. Through reconnecting isolated and lonely individuals, the community gains access to their economic and social capital.



# WHO IS AFFECTED BY SOCIAL ISOLATION AND LONELINESS?

*Frequency of loneliness in people in the UK*

How much of the time in the last week did you feel lonely? (%)				
Age	All or almost all the time	Most of the time	Some of the time	None or almost none
Under 25	2.3	5.7	28.8	63.3
25 - 34	0.9	3.8	26.6	68.8
35 - 44	2.3	4.3	22.1	71.4
45 - 54	2.8	2.5	21.7	73.0
55 - 64	3.1	6.4	21.1	69.5
65 - 74	5.3	3.6	19.7	71.4
75+	5.7	6.5	28.3	57.5

UK Sample (2,386 respondents aged 15+)

(6)

Social isolation and loneliness are conditions that are generally perceived to affect older people. While it is true that these conditions may be more prevalent in the older generations, they can occur at all stages of the life-course, as illustrated by the table above. It is important to note that the effects of social isolation have been shown to accumulate over

time, and the health risks associated with isolation and loneliness increase as people age. It is therefore important to be aware of the factors that may contribute to social isolation and feelings of loneliness, so that efforts can be made to prevent these conditions as early as possible. These contributing factors are detailed in the table below.

CONTRIBUTING FACTORS	DESCRIPTION
Individual Factors	Description
Age	Being older is a strong predictor of loneliness. People aged over 80 are more than twice as likely to suffer severe loneliness when compared to younger age groups.
Gender	Both men and woman can become isolated, however data from the English Longitudinal Study of Ageing suggests that among the older population, men are more isolated than women. Older men reported less monthly contact with both their children and friends than women. (6)



**Partnership status** Individuals who are married or co-habiting with a partner report lower rates of loneliness. A report on the Future of Loneliness found that while only 4% of those married and aged over 50 reported being regularly lonely, 22% of widows are often lonely.

**Ethnicity** Ethnic minority communities may encounter social isolation due to language barriers, cultural or religious differences.

**Income** Low income is an important predictor of loneliness as these groups tend to be disadvantaged in a number of ways. For example: lower levels of mobility, less access to technology and reduced ability to participate in leisure activities.

**Disability** Disability is also an important predictor of loneliness. Disabled charity Sense found that 23% of disabled people feel lonely most days, rising to 38% for young disabled people. (7)

**Physical and mental health** People with long-term health conditions can suffer from social isolation and loneliness due to decreased levels of mobility and increased time spent at medical appointments and getting treatment.

**Access to technology, the internet and social media** Technology has the potential to make a positive impact on loneliness through the provision of communication channels and interactive entertainment. However, there are ongoing debates which suggest technology can actually contribute to the exclusion and isolation of certain groups.

**Community Factors** Description

**Access to public and private transport** Poor transport links can create barriers to social inclusion, preventing people from accessing jobs and socialising opportunities.

**Built environment** The built environment can have a significant impact on whether a person becomes socially isolated, as it affects physical access to family, friends, health services, community centres, shops and other places that facilitate the building and maintaining of social relationships.

**Area safety** Safe public spaces, with pavements to walk on and lighting are also part of the physical infrastructures that impact social interaction.

**Availability of community infrastructure** The availability of 'social capital' in the form of community infrastructure has a strong impact on isolation. The prevalence of recreational areas, cultural groups and voluntary sector organisations has been shown to reduce loneliness in communities.

**Local economy** The strength of the local economy, for example, the availability of employment opportunities, has a considerable impact on social isolation and loneliness.

Societal Factors	Description
Economic context	Recent cuts to public sector budgets may contribute to social isolation and loneliness, as funding for interventions may be untenable and the frequency of social care visits may decrease. The regeneration of urban areas may also lead to the isolation of the existing communities.
Pension structures	For the past generation, the state pension has increased in real value terms, this is unlikely to continue with such increases looking unsustainable between now and 2030. (8)
Political climate	National housing, planning and transport policies will likely impact local development which has a residual effect on isolation, while shifts in political direction may lead to changes in state support networks. For example: greater emphasis may be placed on individual responsibility.
Demographic change	Widespread changes at the demographic level are contributing to social isolation and loneliness. For example: people are living longer, more people are living alone, divorce rates are increasing and fewer people are in caring.

Table has been adapted from a diagram included in the report: *Social Isolation in Bristol (2014)* (7)

As mentioned previously, the effects of social isolation and loneliness accumulate over time, however the conditions can also be caused by specific life experiences or transitions. To this end, it is helpful to view the emergence of these conditions from a life-course perspective, in order to see how the effects are compounded over time. The following life-course break-downs have been adapted from the report, 'Reducing social isolation across the life-course' (6):

**• Pregnancy and Early Years**

While pregnancy can provide opportunities to create new social networks, a survey conducted on behalf of the charity Family Action found that 20% of expectant mothers lack a supportive social environment to help them through their pregnancy. This percentage rises for expectant mothers in low income households. Mothers without supportive social environments have been seen to suffer from increased levels of depression and there is a growing body of evidence linking maternal depression to impaired early child development. Therefore, social isolation among expectant mothers has the potential to transfer disadvantage across generations.

**• Childhood and Adolescence**

Social isolation and loneliness in the young is generally caused by bullying due to non-conformance to local norms in the areas of physical appearance, ethnicity, spoken languages, cultural attitudes, beliefs and sexuality. These factors result in an increased risk of being bullied or excluded by peers. Furthermore, children who have come from unstable backgrounds, such as those who have grown up in care, are also more likely to suffer from social isolation and loneliness. Children who experience sustained social isolation and loneliness typically have lower educational outcomes, as well as higher rates of smoking and obesity in adulthood.

Studies have also found that young carers experience heightened levels of social isolation and loneliness due to stress and anxiety brought about by their caring responsibilities. The 2011 census reports that there are nearly 178,000 carers aged between 5 and 17 in England and Wales.

**• Young Adults**

The major life change that occurs after leaving school has been a trigger for social isolation and loneliness for many young adults. Some will be starting college or university which presents new

challenges in terms of adapting to new found levels of independence, new people and surroundings. Other young people will transition directly into the world of employment and will face similar challenges.

However, it is those individuals that do not progress to further education, training or employment that are most at risk of becoming socially isolated and lonely. Being a young person that is not in education, training or employment (NEET) has a detrimental effect on future life chances due to the lack of opportunities to develop skills. This leads to individuals falling behind their peers in the labour market, and may result in long-term income deprivation and increased likelihood of social isolation.

• **Working age**

Social isolation and loneliness among working age adults is rarely considered, however there are a number of experiences and transitions that can trigger these conditions within this life-stage.

Specifically, the loss of employment has been found to trigger social isolation and loneliness in some individuals due to income deprivation and reduction in daily social interactions. A report on social networks produced by the Royal Society for the Encouragement of Arts, Manufacturers and Commerce (RSA) found that 50% of unemployed people were socially isolated.

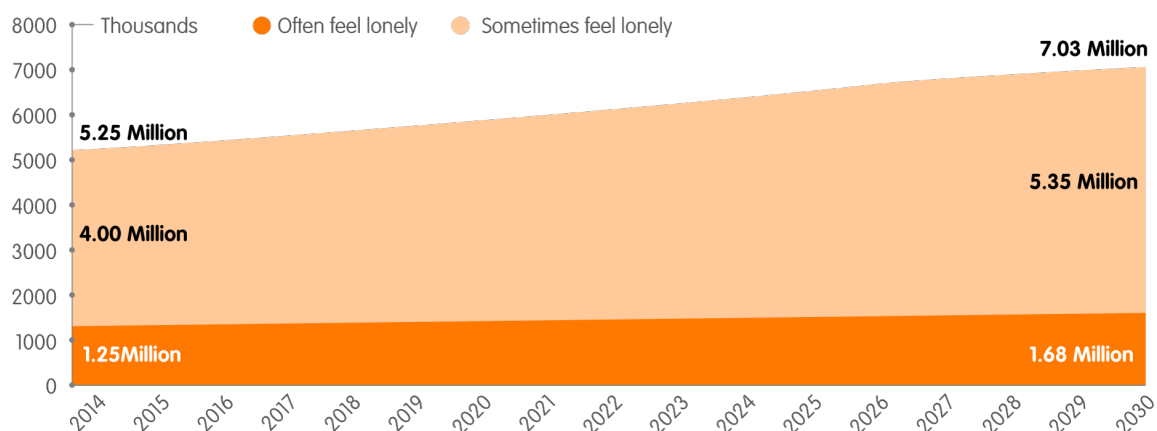
Another transition that has been seen to trigger social isolation and loneliness is the move into parenthood. It is common for one parent to give up or scale-back work commitments in order to take care of the children which can lead to a reduction in the number of daily social interactions.

Finally, a number of formative experiences can be caused by, or lead to social isolation. Addiction, for example, can be triggered by social isolation, or addiction can lead to the onset of isolation. These individuals typically experience these conditions in the extreme, and common outcomes are severe health problems and complete withdrawal from mainstream society.

• **Retirement and later life**

The problems of social isolation and loneliness are most commonly discussed in relation to older people. Decreasing economic resources, declining health, mobility impairments and the death of peers all contribute to the onset of these conditions in older people. In a 2013 study, The Future Foundation reported that the overall number of older people reporting loneliness in the UK is expected to rise by 40%, from 5.25m today to 7m by 2030. Moreover, the rate of growth of the lonely older population will also trend upwards during this time, increasing from a current rate of 1.3-1.5% per year from 2015-2018, to over 2% per year during the early 2020s.

*Numbers of 60+s suffering loneliness, 2014-2030 (model based upon forecast changes in age and partnership status of UK population' (8)*

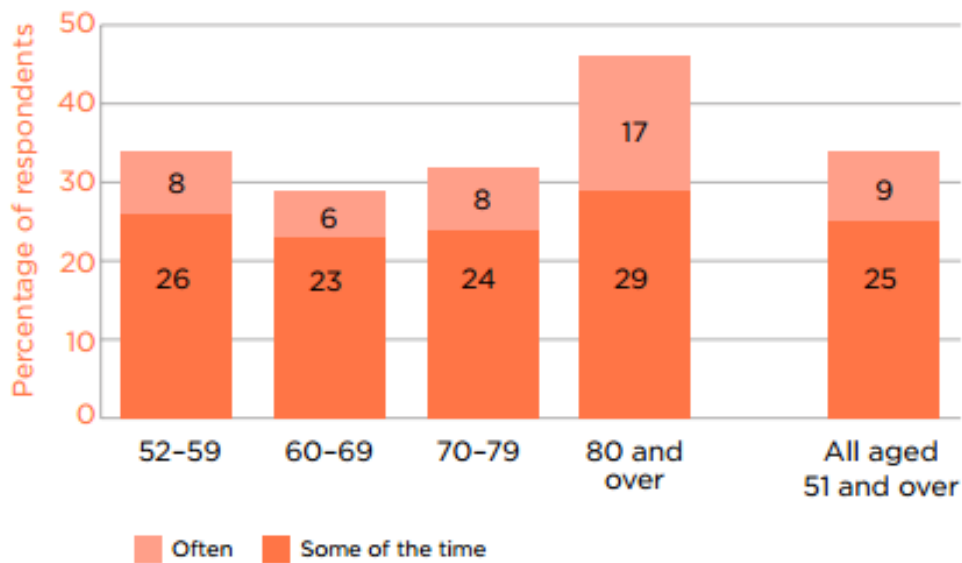


The strong correlation between loneliness and age suggests that it is likely to become a growing concern as the UK population ages. However, it should be noted that feelings of loneliness are not felt uniformly across all ages of older people. In recent years, there has been a much-needed positive reassessment of ageing, which has led to later retirements and the emergence of a fitter, more active and more fulfilling lifestyle for those in the immediate post-

retirement years. Levels of loneliness experienced by those between the ages of 60-69 are actually lower than those within the 52-59 age bracket.

Therefore, in order to avoid a lonelier older population, effort and interventions are increasingly being focused on the 'older old', or those over 80.t

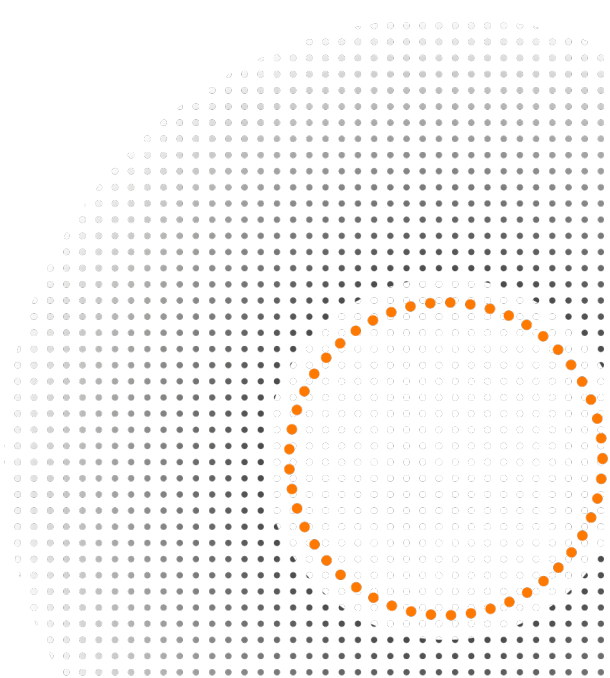
Frequency of loneliness by age



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

(3)

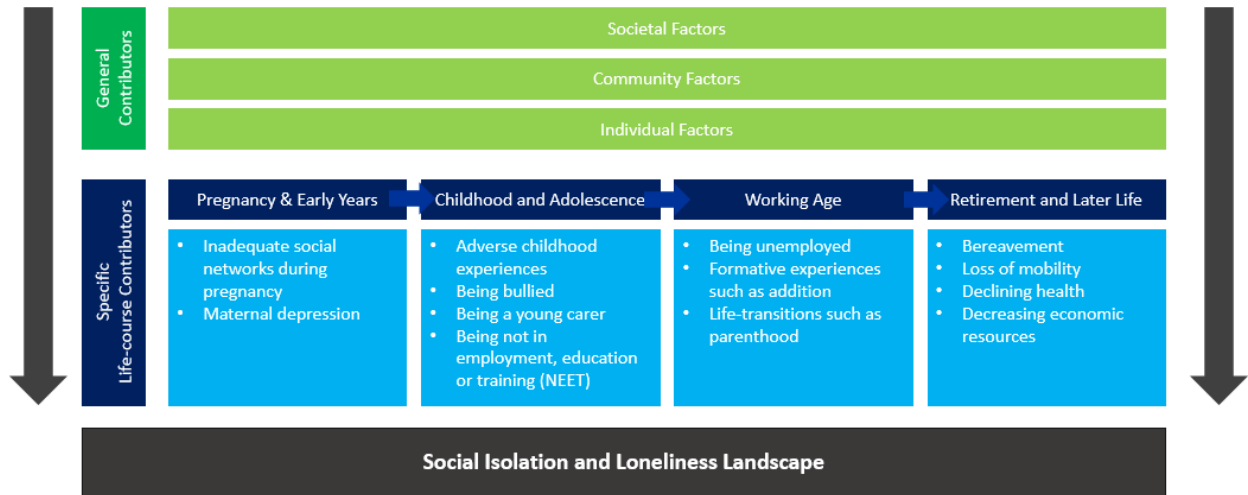
## Summary



As described above, it is clear that there a number of general factors that contribute to the onset of loneliness and social isolation regardless of stage in the life-course. However, there are also a set of more specific factors that can trigger the conditions at particular points in life. As the majority of research around social isolation and loneliness focuses on the elderly

population, many of these factors are missed, resulting in interventions being targeted at one specific group. This section has aimed to raise awareness of loneliness and social isolation among other population demographics, as well as highlighting more specific contributors, in addition to the established socio-economic and general contributing factors.

*Contributors to social isolation and loneliness*



## HOW ARE LONELINESS AND SOCIAL ISOLATION MEASURED?

### 5.1 COMMON METRICS, INDICATORS AND OUTCOMES

As social isolation and loneliness are becoming more high profile problems within society, the methods used to measure these conditions are becoming increasingly standardised. There are established frameworks in place to identify and quantify the extent to which individuals are socially isolated or lonely. Additionally, there are recommended sets of outcome indicators which, when measured pre- and post-intervention, should demonstrate whether the intervention has been successful in its aims to address social isolation and/or loneliness.

Firstly, in line with the objective nature of social isolation, measures of this condition

are generally discrete and easily quantifiable. Typical measures of social isolation include:

- Social network size
- Social network diversity
- Frequency of interaction
- Attendance at group events
- Amount of time spent socialising with friends and family
- Participation in volunteering activities
- Learning and sharing new experiences (9)

On the other hand, measures of loneliness are far more subjective and often rely on self-measurement. There are a number of established frameworks for measuring loneliness. These include:

- Revised UCLA Loneliness Scale
- De Jong Gierveld Loneliness Scale
- Single Question metrics

These frameworks often contain statements like 'my interests and ideas are not shared by those around me', 'my social relationships are superficial' and 'people are around me but not with me.' In the case of the Revised UCLA Loneliness Scale, individuals are asked to score each statement on a scale of 1-4 (1 being never and 4 being often). (10)

Finally, in terms of outcomes, the following list is said to help assess the effectiveness of interventions in improving loneliness and social isolation across identified individuals, while also contributing to proving the business case:

- Number of GP visits
- Anti-depressant prescription usage

- Number of planned and unplanned hospital admissions
- Number of readmissions to hospital
- Number of A&E visits
- Number of outpatient appointments
- Support packages from adult social care required
- Domiciliary support required
- Informal support required
- Entry to residential care
- Qualitative feedback on whether the service had an impact on sense of wellbeing and health
- Level of participation within the community. (3)

## WHAT IS BEING DONE TO ADDRESS LONELINESS AND SOCIAL ISOLATION?

### 6.1 INTERVENTIONS

Interventions aiming to tackle social isolation and loneliness typically address three main areas:

- Enabling individuals to maintain existing relationships
- Facilitating the creation of new connections
- Using psychological approaches to change perceptions of individuals that are suffering from the conditions (Jopling, 2015).

In line with the overarching subject of this report, this section will focus on exploring the range of approaches that are being implemented to enable individuals to maintain existing relationships, create new social connections and change their thinking around their conditions. As well as identifying traditional approaches, wherever possible, the report will identify innovative technology-enabled interventions that are also being used to alleviate social isolation and loneliness. While conducting research it became apparent that the vast majority of interventions in this area are focused on

addressing isolation and loneliness amongst the older population, therefore the interventions discussed in this report largely target this demographic.

### 6.2 ENABLING INDIVIDUALS TO MAINTAIN EXISTING RELATIONSHIPS

Improving access to transport and technology is seen as a vital way of enabling individuals to maintain existing relationships.

- **Transport:** Availability of affordable, accessible and safe transport has been identified as having a huge impact on social isolation and loneliness. Poor transport can restrict access to opportunities such as further education, training, employment, as well as access to health facilities, shops and amenities (Clarke, 2014). Therefore, reducing barriers to local public and community transport should be a top priority for local authorities looking to combat social isolation.

• **Technology:** The impact of technology on social isolation and loneliness has long been a topic of debate, with some arguing that the use of technology has increased and exacerbated the exclusion of certain demographic groups, while others maintain that technology can play a crucial role in enabling people to maintain social connections. Technology-based interventions such as video conferencing, computer training and the provision of internet access have been shown to have generally positive effects on social isolation, while the impacts of social media are less conclusive.

While the enablers listed above are well evidenced, there are a number of more innovative interventions that are leveraging technology to tackle isolation and loneliness.

### Family in Touch (FIT) Prototype (12)

A Canadian group has conducted some research focusing on understanding the communication needs of people in environments associated with social isolation and loneliness, such as retirement communities and long-term care settings, and how technology could be used to facilitate social interaction. The group used this research to inform a series of field studies where technology prototypes were designed, deployed and analysed.

The idea for the Family in Touch (FIT) prototype started when a research student was observing three seniors suffering from various degrees of isolation and loneliness. During conversations with them, the student noticed their habit of touching pictures of their relatives. She inferred that this was a way of reconnecting with family members and their memories. Based around this habit, a prototype was developed consisting of a wooden picture frame with a touch screen display surrounded by LEDs and an asynchronous messaging capability that could be activated through tactile interaction. When the user touched the frame, a pre-set message was sent to a designated family member. The family member would then receive an email to indicate that their relative was thinking of them, and would be able to access a website on which they could record a video message.

The video message was then transmitted back to the photo frame, the LEDs would illuminate to indicate a new message had been received and through touching the frame the video message would be playing.

The senior users appreciated the simple design, tactile user experience and unobtrusive manner of the communication tool, however expressed a desire to be able to send messages and videos to family members, rather than being limited by the asynchronous communication capabilities of the current prototype.

### CogniWin (13)

Supported by funding from the Ambient Assisted Living Joint Partnership, CogniWin supports and motivates older adults to stay active and productive at work by providing smart assistance and well-being guidance. The system uses technologies to assist the learning process in older individuals, while also providing well-being guidance. CogniWin helps adults adapt cognitively with their tasks based on information collected implicitly through their interactions with the system (intelligent mouse interactions, eye tracking, navigation clicks) as well as explicitly providing personal and cognitive characteristics (wellbeing issues, cognitive processing abilities). A virtual 'Adaptive Support and Learning Assistant' then provides feedback and advice to the older person on how to maximise their learning potential and improve their occupational lifestyle.

The solution improves the efficiency and effectiveness of older adults at work by increasing their learning abilities through the use of assistive software and monitoring hardware. The end-result is that older adults feel more confident and secure at work, allowing them to continue working for longer. With retirement being a common trigger for the onset of social isolation and loneliness, CogniWin aims to keep older adults in employment for longer, or give them the confidence to take on part-time or voluntary positions post retirement.

CogniWin ultimately aims to enable older adults to maintain social interactions with colleagues.

While technology and transport are vital in enabling individuals to maintain existing relationships, they also have far wider impacts on how isolated and lonely people are able to engage with services, and how these services are provided. Technology in particular is becoming integral to facilitating the development of new social connections, while also enabling new delivery models.

### 6.3 FACILITATING THE CREATION OF NEW CONNECTIONS

Traditional approaches to facilitating the creation of new social contacts include:

- **Group-based approaches:** the most endorsed approach to combat social isolation and loneliness are group-based activities. However, the primary focus of these groups should not be on social contact, but on something desirable such as learning or practising a common interest. Examples of group-based initiatives include community choirs, faith groups, coffee mornings and 'men in sheds' groups. The evidence supporting the use of group-based approaches to combat loneliness and social isolation is relatively strong. (11)
- **One-to-one approaches:** for some individuals, the practical barriers to getting out in their community are too great. For these people, the facilitation of long-term, one-to-one friendships have been found to be the most practical solution. Ways of creating long-term friendships include the provision of in-person or telephone-based 'befriending' services or visits from community volunteers. There is slightly less evidence for the effectiveness of one-to-one approaches, however for those who cannot easily attend external events, for example; the disabled or those with limited mobility, befriending services have the potential to play a positive role in addressing loneliness and social isolation. (11)

- **Information and sign-posting services:** this approach involves using websites or directories to provide information about social support services and socialisation opportunities.

While these approaches remain widely used, it is in this area that technology has had the biggest impact. Technology has been widely used to alert people to new socialisation opportunities, to open additional methods of communication and to connect people that would ordinarily never meet.

#### Casserole Club (14)

Founded in 2011 by FutureGov and designed in partnership with four local authorities, Casserole Club is a social enterprise that connects those who enjoy cooking and often have extra portions of home-cooked food, with those who may not be able to cook for themselves. The service is facilitated through a website which allows people to sign up as cooks and search for diners in their area who they can offer a meal to. The majority of diners are over the age of 80, making Casserole Club an effective way of addressing isolation and loneliness among the elderly.

Casserole Club now has more than 4,000 volunteer cooks nationwide and of the older people receiving meals through the service, 70% of them consider their volunteer cooks to be friends and 80% say they wouldn't have as much social contact without Casserole Club.

Authorities across the UK currently spend £88 million on delivery of 'meals on wheels', so even a 1% reduction in the number of meals that are required could represent huge savings.



### Good Gym (15)

Launched in 2009, Good Gym works to channel the energy people use while exercising to deliver positive social impact. Instead of exercising in a traditional gym, volunteers are encouraged to partake in three types of run in order to keep fit and help seniors who are isolated from the local community:

- **Run Missions:** volunteers run to help older people with one-off tasks such as clearing gardens or painting
- **Coach Runs:** volunteers are paired with an isolated older person and run to see them each week for a quick neighbourly visit. The older person is called a 'coach' as they help motivate the volunteers to continue running.
- **Group Runs:** Good gym also organises group runs where volunteers come together to help local organisations with tasks such as creating community gardens or clearing derelict land.

Good Gym is facilitated through an online platform which pairs elderly individuals with local runners and represents an innovative approach to combat the problem of social isolation and loneliness amongst the elderly. Having worked with local authorities and the NHS, the service is now open to people from across London as well as individuals in Bath, Birmingham, Bournemouth, Colchester, Sheffield and York.

### Manchester CityVerve – Community Wellness Platform

As part of the IoTUK CityVerve programme, Manchester City Council, along with a number of partners are developing a Community Wellness Platform, which aims to address peoples' health problems before they rise by encouraging physical activity and healthier living, while also combating social isolation within the community.

The business case for this platform is driven by the expectation that early intervention with regards to social isolation and the promotion of healthier lifestyles will improve quality of life for individuals, whilst also reducing long-term costs for the authority and healthcare providers.

The council has used a human-centred design approach to develop the platform using a variety of engagement methods to capture the views of a wide-range of stakeholders.

The council is now in the process of developing a 'minimal viable product' to test with users. This pilot product will consist of a shared, community generated calendar which aims to connect seniors with the opportunities in their distinct local communities in order to reduce levels of social isolation. This shared calendar is being used as a pilot before the broader Community Wellness Platform is developed, allowing the council to test the interfaces, processes and methods, as well as investigate the need for enabling technologies.

Future developments include:

- Functionality to encourage the intergenerational activity between younger and older members of the community. Increased intergenerational contact has been shown to be an effective method of combating loneliness.
- The use of gamification approaches to encourage individuals to make healthier and more active lifestyle choices.
- Integration of other city sensors data to deliver 'nudge' notifications to users to encourage healthier behaviour.
- Serious games, city concierge and talkative bus stops.
- Nudge behaviour using sensors deployed around the city.

The first two interventions discussed above provide examples of how technology is creating a new 'sharing' or 'collaborative' economy. In recent years, websites like Airbnb and TaskRabbit have become immensely popular; however, until now, little attention has been paid to how the collaborative economy model can help address societal challenges, due to the high levels of complexity in the health and social care sector. By working directly with health and social care providers, Casserole Club and Good Gym have successfully created and implemented collaborative models that leverage the existing social capital within the community. This results in a reduction of loneliness within the community, while also relieving pressure on public-sector services and delivering cost efficiencies for local authorities and NHS commissioning groups.

There is a further group of interventions that seek to fulfil a dual role by enabling individuals to maintain existing relationships while also developing new social connections. These interventions are using technology to firstly augment traditional home and social care services, while also providing isolated and lonely individuals with accessible technology that enables them to develop new social connections on their own terms.

#### **InTouch Living, Australia – Digital Social Care (9)**

In Australia, 15% of Home and Community Care (HACC) users receive either social inclusion or emotional support services. The majority of these users are older people and services have traditionally been delivered on a face-to-face basis. However, with an aging population, the number of users requiring these services is increasing. The face-to-face delivery model is costly and is not scaling effectively to keep up with this increasing demand. The result is that touch points with users are becoming less and less frequent, and users have limited choice over who they can connect with and when.

Moreover, this current model does not help older Australians remain in touch with their families or personal networks of friends.

InTouch Living noted that existing consumer technologies such as Skype, Facebook, email and messaging could help older Australians maintain and extend their social networks, if they were adapted for users with limited technology literacy and operational capability. Based on this realisation, InTouch Living produced a commercial digital care solution designed to facilitate interaction between older Australians, their carer, family, friends and wider community.

The InTouch Living solution allows care providers to deliver a personalised social inclusion service to home care clients, while also enabling the older users to take control of their own social interactions.

By using digital technologies to bridge the gap between traditional service methods and consumer services, care providers are able to offer their clients a wider range of social interactions. Firstly, in addition to their regular face-to-face visits, providers are able to hold more frequent virtual meetings which contribute to reducing feelings of isolation and loneliness. Furthermore, care providers can use the InTouch solution to manage and facilitate social interactions between their clients. For example: care givers may connect with clients on multi-party video calls and hold a group discussion on topics of mutual interest. When the user is confident in the system they are able to initiate their own social contact with their carer and others. In this way, InTouch enables care providers to deliver programs that help clients build and activate a social network to overcome social isolation, which in turn reduces dependence on social care services.

### InTouch Living, Australia – Digital Social Care (continued) (9)

#### System Functionality

- Multi-party video calls
- Two-way messaging
- One-click photo sharing
- Noticeboards
- Forums
- Alerts and reminders
- Online activities such as multi-player games and language lessons provided through 3rd party apps.

In these ways, the InTouch Social Support Program has been shown to have a dramatic effect in significantly reducing the cost that social isolation has on elderly Australians and the overall health sector.

#### Benefits:

- **Improved wellbeing:** InTouch technology empowers older community and residential care users to take control of their own social connectivity.
- **Complementary to home care:** Through InTouch care providers can leverage digital social care as part of their core HACC offering.
- **Scale and Reach:** InTouch allows care providers to reach more clients, more frequently, for less money. Initial trials have shown that an hour of digital social inclusion service can be delivered at approximately 60% of the cost of traditional face-to-face emotional support services.

### Vincles, Barcelona (16) (17)

There are currently 338,000 people over the age of 65 years old in Barcelona, a third of whom live alone. By 2040, 25% of the people in the city will be over 65 years old. There is already strain on the city's health and social care systems and this is only likely to increase in the coming years. The city has already launched a telecare service for 60,000 individuals that aims to facilitate

high levels of independence and safety among elderly people. With the knowledge that people with strong support networks remain healthier and independent for longer, Barcelona is now working to use technology to support both families and healthcare professionals with the care of senior citizens, with the aim to reduce isolation and loneliness.

Barcelona's starting point on this journey was creating a proposal in response to a challenge competition run by Bloomberg Philanthropies. The aim of the challenge was to deliver a technology platform that created coordinated networks to strengthen the relationships between those supporting isolated and housebound senior citizens. The main innovation required in this challenge was that the platform should create synergies between formal and informal stakeholders - the formal care sector (professionals) and the informal sector (family, friends, neighbours and volunteers). This would allow different stakeholders to communicate, participate and respond to the needs of the isolated person, the caregivers or the professionals. This would improve the ability of the individual support systems to provide better care and reduce social isolation.

In response to this challenge, Barcelona submitted a proposal and won first prize, receiving an award of \$5.6m to build the platform and implement a pilot. Their solution is called Vincles.

Vincles provides an older person with a tablet computer loaded with the Vincles app. The app has two elements. The first connects the individual with friends, family, neighbours and care givers, and provides a platform for the network members to coordinate the care of the elderly person. The app allows the user to invite up to 10 close family members of friends and neighbours, social or healthcare employees to be part of their private circle. The second element is a social network which puts older people in touch with each other. The app also suggests activities for older people who might prefer to meet in person. By giving the elderly access to tablets, apps and a good internet connection, Vincles hopes to stitch together family, friends and professional caregivers and help the elderly feel less lonely

and more supported to try new things.

### System Functionality

- Communication service by email, video and/or voice allowing all stakeholders to be connected and in permanent dialogue
- Social media features with photo and video storage to help promote socialisation
- Shared calendar to support daily activities and manage healthcare appointments
- Alert system
- Encrypted safe storage of important documents and personal data
- Limited health monitoring features use

The software has been designed to be very simple to use and the creators are keen to stress that the point of this intervention is not to employ technology for its own sake, but rather to use it as a means to facilitate real social contact. The system will be made available to elderly people who live alone, and to people who have some physical and mental limitations.

The pilot started with 20 elderly people and was quickly expanded to include 200 people. Eventually the aim is to extend the project to 20,000 people by 2018. This is no easy feat, as 20,000 support networks will need to be created with the involvement of around 100,000 people. The full roll-out is expected to cost \$16.8m, which will be funded through the Bloomberg award, the city's own budget and corporate sponsorship. In the future, the city hopes that the healthcare system could be a provider and funder of the program.

A number of psychological approaches that have been successful in treating other health conditions are now being applied to the conditions of loneliness and social isolation.

- **Psychological approaches:** a newer approach to tackling isolation and loneliness is to provide services that focus on changing the individual's perception of their relationships, for example, psychological approaches such as Cognitive Behavioural Therapy (CBT) and mindfulness. These approaches are currently used to treat individuals suffering from depression but there is good evidence of their effectiveness in addressing loneliness. While these approaches are not widely used at the moment, experts believe there is significant potential for growth in this area. (11)

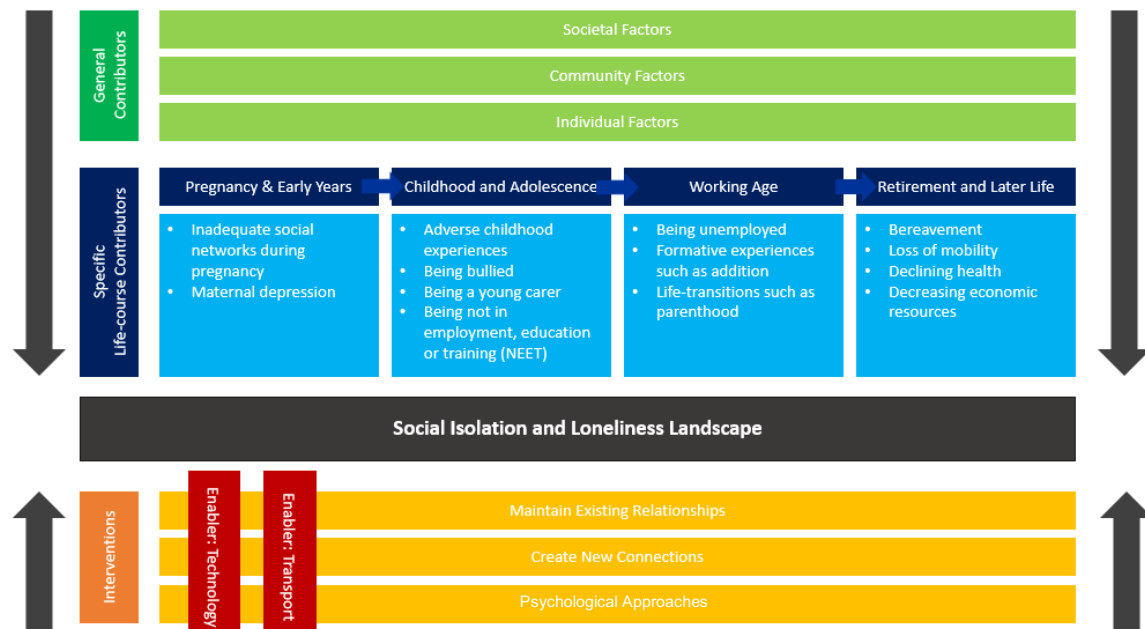
As this is still a fairly new approach to tackling loneliness and social isolation, there are no well-publicised technological innovations in this area. However, it is reasonable to imagine that in the future technology could play a valuable role in delivering the psychological treatments and in providing ongoing support to individuals between therapy sessions.

## 6.4 PSYCHOLOGICAL APPROACHES OF INDIVIDUALS THAT ARE SUFFERING FROM THE CONDITIONS

The final approach that is increasingly being applied to tackle social isolation and loneliness is to attempt to change the way in which individuals think about their relationships.

## 6.5 SUMMARY

### *Social Isolation and Loneliness Landscape*



It is hoped that this section has illustrated that alongside the traditional approaches to delivering interventions seeking to tackle social isolation and loneliness, technology has the potential to vastly increase access to initiatives and facilitate new delivery models.

By opening up communication channels, technology enables lonely and isolated people to better maintain existing relationships as well as allowing them to easily create new connections, which may later develop into enduring relationships. In this sense technology is especially valuable for those with long-term health conditions or mobility impairments as it facilitates the development of social connections from within the home. Furthermore, technology also enables more seamless coordination between formal and informal carers which should result in better overall care and reduced levels of loneliness.

Finally, technology is enabling new delivery methods, such as the collaborative economy models, which are harnessing existing social capital and directing it towards tackling social isolation and loneliness. This is relieving pressure on public services, while also increasing social contact for affected individuals. These models are expected to grow rapidly in the future.

While significant progress has been made in this domain in recent years, there is still much to be done. Many of the interventions discussed are still only experimental trials, and in many cases widespread adoption is still some way off. It is hoped that in the future, technology will have similar impacts in the areas of social isolation and loneliness as it is having on the wider healthcare sector.

# HOW ARE INTERVENTIONS BEING FINANCED?

## 7.1 TRADITIONAL FINANCING METHODS

Social isolation and loneliness interventions are most commonly commissioned and funded by local authorities and/or NHS commissioning groups. Third-party service providers or voluntary organisations are then typically selected to deliver the interventions. However, in times of reducing public budgets there is pressure on the public-sector to ensure money is spent well, and returns on investments are seen. While significant progress has been made in identifying the impacts of loneliness and social isolation on individuals and the wider community, the research base remains inadequate. These inadequacies have prevented commissioners from addressing loneliness at scale. Specific issues include:

- Agreeing and evidencing the precise costs of these conditions and the most effective methods of addressing them.
- Data tends to be about the more objective problem of social isolation rather than the subjective state of loneliness (even in instances where the study refers to both conditions).
- Proving causality in the relationship between loneliness and health, particularly mental health, is difficult and has not yet been evidenced to a satisfactory degree. (12)

While in the past interventions aiming to address loneliness and social isolation have not been well evaluated compared to programmes for other health conditions, improvements are being made. Perpetrators of interventions are seeking to highlight the economic benefits of interventions, as well as the long-term costs of not intervening. They are also seeking to consider the impact of social isolation in a holistic manner, taking into account impacts across service areas, instead of within organisational siloes. This new approach has led to significantly strengthened business cases.

### **Rotherham Social Prescribing Scheme** (19)

The scheme is operated by Voluntary Action Rotherham (VAR) on behalf of NHS Rotherham CCG. Under this scheme, a risk stratification tool is used by GP practitioners to identify eligible patients (mainly older people with a variety of long-term conditions). Advisers then carry out a home visit to complete a social need assessment and link patients into appropriate services in the voluntary and /or community sectors. Available services include befriending and enabling services, dementia services, carer respite services, community engagement groups, advice and information services and therapeutic services.

During the 1-year pilot phase, 83% of patients experienced positive change in at least one social outcome area. The NHS also saw significant benefits with:

- Inpatient admissions reduced by 21%
- A&E attendances reduced by 20%
- Outpatient appointments reduced by 21%

The pilot phase cost £1.1 million. An independent assessment estimated that the longer-term return on investment could reach £3.38 per pound, if the benefits being achieved by the end of the pilot were sustained over a five-year period. Additionally, the value of social benefits relating to patients' wellbeing were estimated to be between £819,000 and £920,000 by the end of the pilot.

### Living Well Cornwall – Newquay (20)

The Living Well programme aims to help people build self-confidence and self-reliance by providing practical support, navigation and coordination to those most at risk of increased dependency and hospitalisation. It was developed as part of the Newquay Pathfinder programme; an initiative founded by Cornwall Council, local clinical commissioning groups, local health and social care providers and Age UK.

The key elements of the Living Well intervention include:

- Identifying at risk individuals using risk stratification, case-finding and local knowledge. Individuals are currently identified using a range of criteria such as: having at least two long-term conditions, having a social care package and having recent unplanned hospital admissions.
- Holding a guided motivational conversation with identified individuals in which they select their goals and develop a plan to achieve them.
- Continued support by volunteers aimed at helping individuals build social networks, connect to their community and increase their physical and social activity.
- Community mapping to identify existing resources and local community leaders
- Information sharing between all sectors, using common protocols, to ensure all stakeholders are aligned.

While currently in a pilot phase, a recent evaluation showed a minimum of 29% reduction in the costs associated with hospital admissions, as well as further cost savings across the health and social care system. In addition to this, clients reported a 23% improvement in their wellbeing scores. With the intervention costing approximately £400 per person to deliver, taking into account all cost savings, the Newquay initiative has demonstrated a 4:1 return on investment.

## 7.2 EMERGING FINANCING MODELS: OUTCOME-BASED CONTRACTING

As discussed above, there has been significant interest in addressing loneliness and social isolation by many local authorities and NHS commissions, however few solutions have demonstrated robust evidence of impact and the ability to scale. The mixed track record of previous loneliness interventions has made financing through traditional avenues difficult, with health and social care commissioners unwilling to commit to funding interventions that are not proven to be effective. (3) In order to transfer risk, commissioners are starting to use outcome-based financing methods to fund interventions. Within these models, payments to service providers are only made if new services are successful, therefore the risk of delivery is transferred away from the commissioning body.

The problem with this approach is that many of the service providers are small and do not have adequate capital to accept these risks or to fund these services upfront before being repaid if the service is effective. (3)

In order to balance the desires of the commissioning bodies with the limited resources of the delivery partners, Social Impact Bonds are being used to finance interventions aiming to have a social outcome.

### Social Impact Bonds

A Social Impact Bond is an outcome-based or 'payment-by-results' financing model in which third-party private or social investors agree to finance the upfront costs of an intervention. These funds are transferred to the delivery partners so the intervention can be started and commissioners commit to pay investors if there is an improvement in social outcomes from the financed intervention. During and following service delivery there is a robust evaluation process which focuses on the effectiveness and cost benefits of the service. The commissioners only pay if and when results are delivered. If the outcomes are not achieved, the investors do not recover their investment. (5)

This style of commissioning gives service providers the freedom and flexibility to design and shape a service in order to deliver concrete, measurable and agreed outcomes. This is hoped to incentivise the creation of innovative interventions and delivery methods due to the

additional freedom experienced by the service provider. Examples of where Social Impact Bonds have been used in the past are to finance interventions aimed at improving levels of education, employment or reducing levels of reoffending.

### Benefits of Social Impact Bonds

- Risks around the delivery failure and the overall success of the initiative are transferred to the investor.
- Due to the outcome-based measurement approach, Social Impact Bonds have been seen to encourage innovation in service design and deployment as funding can be deployed flexibly.
- Additional oversight from the third-party investor can be used as an additional performance management tool. (3)

It is for these reasons that a Social Impact Bond may be a useful approach to commissioning new interventions and services to combat loneliness and social isolation.

In order to set up a Social Impact Bond, a number of key questions must be agreed upon by the three main actors: the social investor, the commissioning body and the delivery partner(s). Specific questions include:

- How much will the commissioner pay for agreed outcomes?
- What is the minimum threshold of improvement that must be seen to trigger payments?
- What will be the process for calculating payments?
- Who will be responsible for calculating payments?
- How will evidence of outcomes be verified? (3)

These questions ensure that all actors understand their responsibilities, as well as terms and conditions of payment.

Until recently, the use of Social Impact Bonds to finance social and loneliness interventions within the UK was unheard of. However, in May 2015 a public-sector consortium from Worcestershire commissioned the first bond to focus on these conditions.

### Reconnections Ltd (21)

In May 2015, Worcestershire County Council and three local clinical commissioning groups (CCGs) jointly commissioned the 'Reconnections Social Impact Bond' with the aim of using the finance raised to help 3000 people overcome loneliness in the county. It is the first Social Impact Bond in the UK to tackle loneliness and raised £850,000 to enable the mobilisation and delivery of the project and initial interventions.

The investors in the Reconnections Social Impact Bond are Big Society Capital and Nesta Impact Investments, and they will only receive a return on their investment if the service achieves the agreed positive outcomes. The Reconnections Social Impact Bond service will be delivered by AgeUK Herefordshire and Worcestershire, together with local voluntary and community organisations.

The bond will be managed by the Reconnections Ltd company, with performance management oversight provided by Social Finance.

A payment agreement was developed which stated that payments will be made based on reductions in loneliness, measured using the 4-item revised-UCLA scale. Measurements will be taken at 6 and 18 months post-enrolment in the service. The service became operational in August 2015.

An interim assessment of the service was conducted in June 2016 which revealed it was having some success in lowering levels of loneliness, meaning that the investors are likely to receive some return on investment.

Currently the service aims to prevent loneliness within the general population, some of whom may already be lonely, however some will not be. Using an incidence-based costing approach, the assessment revealed that the service could help avoid net present value costs of more than £1,700 (2015 values) per person over 10 years. 59% of these savings were due to the avoidance of unplanned hospital admissions, with a further 16% of savings coming from the avoidance of excessive GP consultations.



If the service could be targeted solely at those who are lonely most of the time these avoidable costs could increase to £6,000 per person over 10 years (McDaid, 2016).

In addition to the £850,000 raised to fund the service intervention, the Centre for Social Action Innovation Fund granted an additional £420,000 to Social Finance to develop and scale the Reconnections Social Impact Bond model so this new approach to tackling social isolation and loneliness could be easily replicated elsewhere.

Following this work, Social Finance recently reported that, 'through the process of designing, contracting and delivering a Social Impact Bond with Worcestershire stakeholders, we have found that a social impact bond can be a viable way to fund and test innovative ways of identifying and supporting those suffering from loneliness.' (3)

With the validity of the approach confirmed, there is the potential for many other interventions aimed at tackling loneliness and social isolation to be funded in this way in the future.



## CONCLUSION

As mentioned in the introduction, this report has aimed to provide an overview of the social isolation and loneliness landscape in the UK, taking into account the factors that contribute to the development of the conditions, those who are most affected, the impacts of the conditions on individuals and public services, and the approaches and interventions that are currently used to address them. Wherever possible, local and international best practice case-studies have been included to evidence progress being made in this domain. Finally, this document has briefly discussed the challenges faced when trying to finance interventions aiming to combat social isolation and loneliness, and has introduced an outcome-based financing model which could facilitate the delivery of more innovative solutions.

Loneliness and social isolation are prevalent within our society and the impact of the conditions on both individuals and the wider communities are becoming increasingly well-understood and quantified. Individual impacts of social isolation and loneliness include increased rates of premature death, lower standards of general wellbeing and higher levels of disability from chronic diseases. (9) In terms of impacts on public services, the cost of being chronically lonely is on average £12,000 per person, based on number of GP visits, A&E visits and unplanned hospital admissions. (13)

Social isolation and loneliness are most commonly discussed in relation to older people, but this report has highlighted that these conditions can be experienced by people at any life-stage, and more importantly, the effects are compounded over time. Social isolation in childhood is associated with continued isolation in adolescence and adulthood. (6) Social isolation at these stages has been shown to result in these individuals falling behind in the labour market, which has the potential to lead to long-term income deprivation. Furthermore, isolation in adulthood is also associated with cardiovascular risk factors such as obesity and elevated blood pressure. As individuals progress into old age, high levels of social engagement over the life-course have been shown to lower levels of physical and cognitive limitation. (6)

Looking to the future, the overall numbers of older people reporting loneliness are predicted to rise 40% between now and 2030. Many of these individuals may already be socially isolated, therefore increased efforts are required to identify and treat them before serious health consequences manifest. The factors that contribute to loneliness and social isolation are well understood and at-risk individuals can be identified more accurately. Therefore, money should be spent investing in engaging with the right people at the right time. This will require intra- and inter-organisational engagement between GPs, housing associations, social care providers and the wider community. (3)

Interventions seeking to tackle social isolation and loneliness typically take one of three approaches. Firstly, interventions seek to enable individuals to better maintain their existing social interactions. Secondly, interventions often try to facilitate the creation of new social connections. The final and newest approach is to use psychological therapies to help the individual reassess the way they think about their relationships. (11)

In recent years, technology has played an increasingly important role in the way interventions are delivered and how isolated people interact with services. However, what has become clear is that social isolation and loneliness are complex issues which technology alone cannot solve. A commonly held view is that technology should be used to augment existing service offerings and facilitate real-world social interactions, rather than being a complete solution on its own.

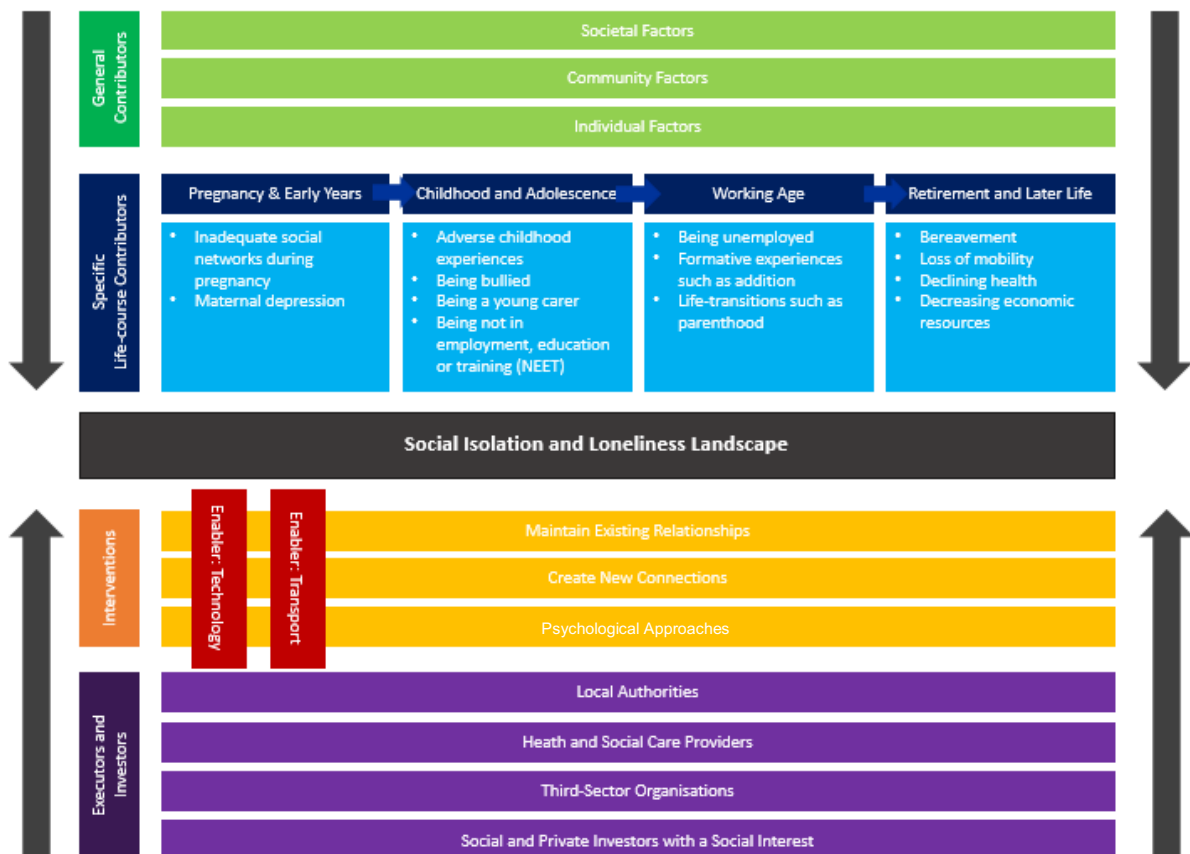
The final area explored in this report is the subject of financing. Social isolation and loneliness interventions are commonly commissioned and funded by local authorities and/or NHS commissioning groups. However, in times of reducing budgets, there is pressure on these public-sector organisations to ensure money is well spent and return on investment is seen. While significant improvements have been made in identifying the impacts of loneliness and social isolation, the underlying evidence base remains inadequate as direct causality is difficult to prove. This has resulted in weak and open-ended business cases. On top of this, the mixed track record of previous loneliness interventions has made financing through traditional avenues difficult. (3)

An emerging approach to financing is the use of outcome-based mechanisms such as Social Impact Bonds. This style of financing gives service providers the freedom and flexibility to design and shape a service in order to deliver concrete, measurable and agreed outcomes. Delivery risks are transferred to third-party investors, who are only repaid if the intervention delivers positive social outcomes. This approach has the potential to allow commissioners and delivery partners to innovate and experiment in order to deliver more extensive benefits.

In summary, it is clear from the research conducted that social isolation and loneliness remain huge problems in our society, however progress is being made in both identifying vulnerable individuals and strengthening the

business case for interventions through the more effective evaluation of existing interventions. Technology can offer a cost-effective way of providing wider services and support, however it should be used in conjunction with more traditional approaches in order to combat both social isolation and loneliness. In terms of areas for future development, it is apparent that there needs to be a renewed focus on addressing loneliness and social isolation earlier in the life-course in order to minimise negative outcomes later in life. Furthermore, while there is still uncertainty around which interventions are most effective in reducing loneliness and isolation, both funders and delivery partners should embrace experimentation and innovation, while aiming to develop a multi-pronged approach to tackling these conditions.

*Social Isolation and Loneliness Landscape*



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The logo for IoT UK, featuring the lowercase letters 'iot' in orange and 'UK' in white, positioned in the upper right corner of the page.

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