Submission No 116

INQUIRY INTO PREVALENCE, CAUSES AND IMPACTS OF LONELINESS IN NEW SOUTH WALES

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ASPIRE

Australian Social Prescribing Institute of Research and Education

Response to Inquiry into the prevalence, causes and impacts of loneliness in New South Wales

Submitted by the Australian Social Prescribing Institute of Research and Education (ASPIRE)

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Executive Summary

Despite technological advances, our society faces a fundamental crisis of disconnection, with unprecedented levels of social isolation and loneliness affecting all demographics. This crisis manifests through fragmented community ties, reduced face-to-face interactions, and built environments that inhibit social connection, creating cascading negative impacts on public health and economic productivity.

The Australian Social Prescribing Institute of Research and Education (ASPIRE) presents evidence-based solutions through social prescribing - a structured approach that bridges healthcare and community supports. While our healthcare system excels at addressing acute medical needs, it isn't designed to tackle these underlying social determinants of health. Meanwhile, valuable community resources remain underutilized due to lack of structured access pathways.

Our submission responds to key aspects of loneliness identified in the inquiry's terms of reference:

Prevalence and Measurement

- Current research reveals significant challenges in measuring loneliness across NSW
- Social prescribing offers new opportunities for systematic data collection and analysis
- Integration of healthcare and community data enables better tracking of outcomes
- Current research reveals significant challenges in measuring loneliness across NSW
- Recent data shows around 40% of NSW individuals experience loneliness
- In 2021, 37% of NSW residents reported feeling lonely, with 48% experiencing it some of the time or often
- Social prescribing offers new opportunities for systematic data collection and analysis
- Integration of healthcare and community data enables better tracking of outcomes

At-Risk Populations

- Carers experience significant isolation with documented health impacts
- People with workplace injuries are at risk of loneliness
- Geographic and socioeconomic factors influence loneliness risk
- Multiple age groups affected, from children to older adults
- People living alone face higher risks

Health and Economic Impacts

- Strong links between loneliness and adverse mental health outcomes
- 42% higher cardiovascular disease risk in socially isolated populations
- Substantial economic costs through increased healthcare utilisation
- Reduced workforce participation and productivity impacts

Evidence-Based Solutions

Our research demonstrates that social prescribing provides:

- Documented improvements in mental health outcomes and social connection
- Cost-effective intervention through community-based supports
- Sustainable pathways to social engagement
- Integration with existing healthcare systems

Implementation Framework

We propose a comprehensive approach that:

- Establishes systematic referral pathways
- Supports Link Worker training and deployment
- Enables health and community service integration
- Provides sustainable funding mechanisms
- Creates clear evaluation protocols

This submission presents a detailed framework for implementing social prescribing across NSW, supported by Australian research and successful program outcomes. By combining practical interventions with systemic change, social prescribing offers a cost-effective, evidence-based solution to combat loneliness and build more resilient communities across our state.
Our recommendations focus on immediate actions while acknowledging the need for long-term systemic change. Through coordinated implementation of social prescribing frameworks, NSW has the opportunity to address this significant public health challenge effectively and sustainably.

Introduction

ASPIRE's Role

The Australian Social Prescribing Institute of Research and Education (ASPIRE) is pleased to present this submission to the Inquiry into the prevalence, causes and impacts of loneliness in New South Wales. ASPIRE brings together expert perspectives from researchers and practitioners across multiple disciplines to examine evidence-based solutions through social prescribing and systemic change.

Our scope encompasses a wide array of stakeholders—from academic entities like universities to community-based organisations and healthcare providers. Our mission is not merely to adopt global best practices, but to shape personalised models of health and wellbeing that align with Australia's unique health and social care policies, funding schemes, and service frameworks. Through ASPIRE, we offer a roadmap for an inclusive, community-driven, and individual-centric health and social wellbeing system. Our vision is to create a place with sustainable wellbeing where resilient and connected communities uplift and value all Australians.

What is Social Prescribing

Social prescribing involves a trusted referrer connecting a person to a link worker, who acts as a resource while the individual creates their own personalised plan, identifying opportunities and avenues for enrichment to enhance their quality of life. It's a means of individuals accessing sources of non-medical supports within the community to improve their health and wellbeing. Social prescribing can significantly improve wellbeing and quality of life, and reduce unnecessary health, social, and wellbeing costs by addressing underlying factors [1].

Many people with long-term health conditions need more than just medical treatment to feel better. While doctors focus on physical health, issues like food insecurity and loneliness can greatly affect wellbeing. Social prescribing works alongside regular healthcare by connecting patients to community services that address these non-medical needs. Trusted people such as healthcare providers (such as doctors or pharmacists), teachers, coaches, and hairdressers can often recognise when people are experiencing loneliness and isolation but often aren't sure how to address underlying factors. Link workers social prescribing offers a practical point of connection and support which can work with individuals and communities to connect people to exiting services and assets and improve overall community connection and welling. A more detailed explainer is in Appendix A.

[1] Christina Aggar et al., 'Social Prescribing as an Intervention for People with Work-Related Injuries and Psychosocial Difficulties in Australia', *Advances in Health and Behavior* 3, no. 1 (2020): 101–10, https://doi.org/10.25082/AHB.2020.01.001; Christina Aggar et al., 'Social Prescribing for Individuals Living with Mental Illness in an Australian Community Setting: A Pilot Study', *Community Mental Health Journal* 57, no. 1 (1 January 2021): 189–95, https://doi.org/10.1007/s10597-020-00631-6.

The Challenge

Our society faces a fundamental crisis of disconnection. Despite technological advances and increasing connectivity, we are experiencing unprecedented levels of social isolation and loneliness across all age groups and demographics. This crisis manifests in multiple ways:

- Fragmentation of community ties and social networks
- Reduction in meaningful face-to-face interactions
- Erosion of traditional community gathering spaces
- Increasing individualization of daily life
- Built environments that inhibit social connection
- Loss of informal support systems
- Growing mental health challenges
- Physical health impacts of social isolation

This disconnection creates a cascade of negative outcomes affecting individual and public health, community resilience, and economic productivity. The healthcare system, while excellent at addressing acute medical needs, is not designed to address these underlying social determinants of health and wellbeing. Meanwhile, community resources that could help rebuild social connections often remain underutilised due to lack of structured pathways for access.

Social isolation and loneliness contribute to adverse physical and mental health outcomes yet treating them primarily through mental health services is neither effective nor sustainable. These are social challenges, not illnesses, and addressing them through clinical services places unnecessary strain on an already stretched healthcare system. This is particularly problematic given that mental health services like psychiatry and clinical psychology are both limited in availability and expensive, especially outside metropolitan areas.

This challenge manifests in two ways: through gaps in community support systems that limit pathways to social connection, and through built environments that inhibit meaningful interaction. While addressing the latter requires long-term policy change, social prescribing offers an immediate, cost-effective way to help people navigate these barriers and rebuild social connections through existing community resources.

The Opportunity

Social prescribing tackles these systemic issues by creating a coordinated, community-level response. It works by establishing formal pathways between healthcare providers, social services, and community organizations, while training link workers who understand local resources and barriers. This structured approach helps identify people at risk of isolation early, connects them with appropriate community supports, and builds the capacity of local organizations to sustain these connections. Rather than treating loneliness as an individual problem, social prescribing strengthens the entire ecosystem of community support - from neighbourhood groups and cultural programs to physical activity initiatives and volunteer networks. This creates a sustainable foundation for social connection that can adapt to local needs and resources.

By implementing comprehensive social prescribing frameworks, we have the opportunity to:

- Build more resilient communities
- Reduce pressure on healthcare systems
- Improve mental and physical health outcomes
- Enhance economic productivity
- Create sustainable social support networks
- Address systemic causes of disconnection

This submission responds directly to the inquiry's terms of reference, demonstrating how social prescribing provides evidence-based solutions across multiple domains:

Term of Reference	Key Points	Social Prescribing Opportunity
(A) Extent and measurement of loneliness	• Limited contextual research on loneliness influences • Individual-focused measurement approaches dominate • Need for multilevel studies [2]	• Provides structured framework for measuring outcomes • Enables systematic data collection across health and social domains • Allows tracking of both individual and community-level impacts
(B) At-Risk Populations	• Carers experience significant isolation [3] • Multiple age groups affected • Higher prevalence in disadvantaged areas [4] • People living alone at higher risk • Significant life changes, like illness or workplace injuries, can impact on social connection and wellbeing	• Can target specific at-risk groups with tailored programs • Provides flexible pathways for different population needs • Creates accessible entry points for isolated individuals • Links vulnerable groups to appropriate community supports
(C) Psychological and physiological impacts	• Strong mental health condition links • Impacts on carers' mental health [5] • Affects both individuals and support systems	• Connects individuals to mental health support • Provides preventative interventions • Combines social and health support

[2] Xiaoqi Feng and Thomas Astell-Burt, 'Lonelygenic Environments: A Call for Research on Multilevel Determinants of Loneliness', *The Lancet Planetary Health* 6, no. 12 (1 December 2022): e933–34, https://doi.org/10.1016/S2542-5196(22)00306-0.
[3] Xinqi Liao et al., 'Loneliness and Social Isolation among Informal Carers of Individuals with Dementia: A Systematic Review and Meta-Analysis', *International Journal of Geriatric Psychiatry* 39, no. 5 (2024): e6101, https://doi.org/10.1002/gps.6101.
[4] Michelle H. Lim et al., 'The Prevalence of Chronic and Episodic Loneliness and Social Isolation from a Longitudinal Survey', *Scientific Reports* 13, no. 1 (1 August 2023): 12453, https://doi.org/10.1038/s41598-023-39289-x.
[5] Ishani Kartik Majmudar et al., 'The Association between Loneliness with Health Service Use and Quality of Life among Informal Carers in Australia', *Social Science & Medicine* 348 (May 2024): 116821, https://doi.org/10.1016/j.socscimed.2024.116821.

Term of Reference	Key Points	Social Prescribing Opportunity
	• Increased mental health service usage	• Evidence shows SP improves psychological outcomes [6]
(D) Social connection and physical health	• 42% higher cardiovascular disease risk [7] • Enhanced benefits of physical activity in natural settings • Arts/cultural engagement improves wellbeing • Strong coronary heart disease link	• Links people to physical activity programs • Combines health and social interventions • Provides structured physical activity opportunities • Creates sustainable health behaviour change
(E) Transient to chronic loneliness	• 'Lonelygenic environments' contribute • Urban design impacts • Limited social interaction opportunities • Stigma perpetuation	• Interrupts progression to chronic loneliness • Creates sustainable social connections • Provides ongoing support pathways • Addresses environmental barriers
(F) Financial costs	• Healthcare system usage impacts • Reduced productivity costs • Mental health service burden	• Can reduce healthcare costs • Preventative approaches reduce long-term costs • Efficient use of existing community resources • Cost-effective intervention model
(G) Existing initiatives	• Nature-based programs • Cultural activities • Physical exercise groups • Arts-based programs • Pet companionship	• Framework integrates existing programs • Coordinates service delivery • Maximizes resource utilisation • Creates systematic referral pathways
(H) Other jurisdictions	• UK creative health initiatives • Canadian arts participation evidence • US health behaviour approaches • International SP success	• Internationally recognised model • Evidence base from multiple countries • Adaptable to different contexts • Proven implementation frameworks
(I) State Government steps	• Recognition of systemic issues • Research investment needs • Urban planning requirements • Program support needs	• Provides government policy framework • Enables coordinated approach • Measurable outcomes for policy evaluation • Evidence-based intervention model

[6] Genevieve A. Dingle et al., 'A Controlled Evaluation of Social Prescribing on Loneliness for Adults in Queensland: 8-Week Outcomes', *Frontiers in Psychology* 15 (12 April 2024), https://doi.org/10.3389/fpsyg.2024.1359855.

[7] Rosanne Freak-Poli et al., 'Social Isolation, Social Support and Loneliness as Predictors of Cardiovascular Disease Incidence and Mortality', *BMC Geriatrics* 21, no. 1 (13 December 2021): 711, https://doi.org/10.1186/s12877-021-02602-2.

Term of Reference	Key Points	Social Prescribing Opportunity
(J) Community and technology steps	• Community-based activities • Structured support systems • Group activity value	• Connects community resources • Leverages existing infrastructure • Creates sustainable programs • Builds community capacity
(K) Other related matters	• Cultural practice importance • Pet companionship value • Leisure activity benefits	• Incorporates diverse approaches • Culturally sensitive programming • Flexible intervention options • Comprehensive solution model

Part 1: Evidence for Social Prescribing as a Solution

Australian Evidence

Social prescribing has demonstrated significant success in Australian trials, with robust evidence supporting its effectiveness in addressing loneliness and improving overall wellbeing. The world's first study examining social prescribing for workplace injuries, funded by the NSW Government through icare (Insurance & Care NSW), demonstrated groundbreaking results. This landmark Australian study showed significant reductions in loneliness and improvements in quality of life and mental wellbeing for people with workplace injuries[8]. The program's success, recognised through multiple awards, demonstrated strong economic returns with icare's evaluation reporting a Social Return on Investment of $3.84 for every dollar invested[9]. This pioneering work established Australia, especially NSW, as a leader in innovative social prescribing applications. See Appendix B and C for details.

Building on this foundation, other Australian trials have shown similarly impressive outcomes. A controlled trial in southeast Queensland found that participants in social prescribing programs showed marked improvements in loneliness and trust levels compared to those receiving standard GP care[10]. Notably, these benefits were sustained and enhanced over time, with significant improvements in loneliness, perceived general health, psychological distress and wellbeing documented across an 18-month period.

Further evidence comes from the Brisbane North Primary Health Network's evaluation, which revealed substantial improvements in participants' satisfaction with physical, psychological and social health, alongside measurable reductions in loneliness[11]. These outcomes were achieved through connecting participants with diverse community-based activities, including arts programs, social groups and physical activity initiatives.

Social prescribing has also shown particular effectiveness for people with mental illness[12]. For carers, who often experience significant isolation due to their caregiving responsibilities, community participation through social prescribing has demonstrated improved mental health outcomes by reducing the emotional burden of caregiving [13]. Research indicates that carers who experience loneliness are more likely to access mental health services compared to those who do

[8] Aggar et al., 'Social Prescribing as an Intervention for People with Work-Related Injuries and Psychosocial Difficulties in Australia'.
[9] icare Foundation, 'Social and Economic Impact Report 2019', 2019, https://www.icare.nsw.gov.au/-/media/icare/unique-media/about-us/icare-foundation/social-and-economic-impact-report/social-and-economic-impact-report.pdf.
[10] Dingle et al., 'A Controlled Evaluation of Social Prescribing on Loneliness for Adults in Queensland'.
[11] Leah S. Sharman, Ally Jones, and Genevieve Dingle, '1-Year Evaluation of the Social Prescribing Trial in Brisbane North', 23 August 2024, https://espace.library.uq.edu.au/view/UQ:32464dc.
[12] Aggar et al., 'Social Prescribing for Individuals Living with Mental Illness in an Australian Community Setting'.
[13] Itismita Mohanty et al., 'A Multilevel Mixed Effects Analysis of Informal Carers Health in Australia: The Role of Community Participation, Social Support and Trust at Small Area Level', *BMC Public Health* 20, no. 1 (December 2020): 1801, https://doi.org/10.1186/s12889-020-09874-0.

not experience loneliness [14], highlighting the potential for social prescribing to provide cost-effective preventative support.

International Evidence

The international evidence base for social prescribing continues to grow, with established programs providing valuable insights for Australian implementation. The United Kingdom has successfully embedded social prescribing within its national healthcare framework, offering important lessons for systemic integration.

The UK's All Party Parliamentary Working Group creative health review recommended that creative health 'should form an integral part of a 21st-century health and social care system -- one that is holistic, person-centred, and which focuses on reducing inequalities and supporting people to live well for longer' [15]. This whole-of-system approach has demonstrated the importance of standardised referral pathways, established Link Worker frameworks, and integration with existing health services.

Canadian evidence provides strong support for arts and cultural engagement as key components of social prescribing. Research has established robust connections between arts participation and improvements in both general and mental health [16]. The Canadian model demonstrates particular success in cultural sensitivity and program design, especially in rural and remote implementation.

In the United States, social prescribing elements have been successfully framed within public health frameworks, particularly in addressing mental health inequities [17]. This approach has highlighted the importance of preventative programming and community-based delivery models.

Cost-Effectiveness and Healthcare Impact

The economic case for social prescribing is compelling, with evidence demonstrating both direct healthcare savings and broader societal benefits. Research indicates that social prescribing can reduce pressure on clinical services while providing more appropriate community-based support. This is particularly significant given evidence that loneliness increases the likelihood of mental health service utilisation [18].

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[14] Majmudar et al., 'The Association between Loneliness with Health Service Use and Quality of Life among Informal Carers in Australia'.
[15] NCCH, 'National Centre for Creative Health', accessed 30 October 2024, https://ncch.org.uk/.
[16] 'Canadians' Arts Participation, Health, and Well-Being', Canada Council for the Arts, accessed 30 October 2024, https://canadacouncil.ca/research/research-library/2021/03/canadians-arts-participation-health-and-well-being.
[17] Alexandra K. Rodriguez et al., 'Arts Engagement as a Health Behavior: An Opportunity to Address Mental Health Inequities', *Community Health Equity Research & Policy* 44, no. 3 (17 May 2023): 315, https://doi.org/10.1177/2752535X231175072.
[18] Majmudar et al., 'The Association between Loneliness with Health Service Use and Quality of Life among Informal Carers in Australia'.

The preventative nature of social prescribing creates long-term cost benefits through early intervention in social isolation and prevention of chronic health conditions. For example, studies have shown that older Australians with poor social health were 42% more likely to develop cardiovascular disease and twice as likely to die from cardiovascular disease over approximately four and a half years follow-up [19]. Social prescribing programs that enhance social connection could potentially mitigate these serious health impacts and their associated costs.

Implementation evidence from various jurisdictions demonstrates that successful social prescribing programs can:

- Reduce pressure on primary care and mental health services
- Decrease medication dependence
- Lower hospital admission rates
- Improve workforce participation outcomes
- Enhance community resilience

The WorkCover context provides compelling evidence of cost-effectiveness, with the NSW Government already demonstrating commitment through investment in social prescribing via icare NSW. Aggar et al.[20] demonstrated successful outcomes through this program, showing particular effectiveness for injured workers experiencing isolation. The program provided structured pathways back to social connection and employment, demonstrating significant cost benefits through reduced compensation duration, with icare's evaluation reporting a Social Return on Investment (SROI) of $3.84 for every dollar invested[21]. See Appendix B for details.

Current Primary Health Network implementations, while showing promise, highlight the need for expanded resourcing to achieve population-level impact. Programs in Northern Sydney PHN, Central and Eastern Sydney PHN, and Southeastern NSW PHN demonstrate effective outcomes but face resource constraints that limit their scale.

The combined international evidence and economic analysis present a compelling case for social prescribing as a cost-effective, evidence-based intervention. These findings, alongside successful Australian implementations, provide a strong foundation for expanded adoption across New South Wales. The evidence particularly supports:

- Increased resourcing for proven programs
- Expanded implementation support
- Systematic scaling of successful models
- Coordinated state and federal funding approaches

[19] Freak-Poli et al., 'Social Isolation, Social Support and Loneliness as Predictors of Cardiovascular Disease Incidence and Mortality'.
[20] Aggar et al., 'Social Prescribing as an Intervention for People with Work-Related Injuries and Psychosocial Difficulties in Australia'.
[21] icare Foundation, 'Social and Economic Impact Report 2019'.

Part 2: Understanding Loneliness in NSW

Measurement and Prevalence

Current research demonstrates significant challenges in measuring and addressing loneliness across New South Wales. As Feng and Astell-Burt [22] argue, the current narrative has perpetuated loneliness and contributed to stigma that has aggravated the felt experience of being lonely, ignored key determinants, and undermined understandings of the full social and economic costs. Traditional approaches have focused predominantly on individual-level assessment, while broader contextual factors have received limited attention [23].

While traditional measurement approaches have focused predominantly on individual-level assessment, social prescribing offers unique opportunities for enhanced data capture and measurement through systematic integration of multiple data sources:

Structured Data Collection Framework

- Link Workers collect firsthand qualitative and quantitative data about individual experiences of loneliness, barriers to social connection, and intervention outcomes
- Primary Health Networks (PHNs) gather regional health data that can contextualize loneliness within broader health outcomes
- Local councils provide demographic and community resource information
- Community organizations contribute data on program participation and engagement

This multi-level data collection approach enables:

- Triangulation of information to identify patterns and trends
- Better understanding of local needs and service gaps
- More accurate measurement of intervention effectiveness
- Improved resource allocation based on evidence

When these data sources are systematically integrated through social prescribing frameworks, they can provide a more comprehensive understanding of loneliness prevalence and impacts than traditional single-source measurement approaches. This integration also creates opportunities for longitudinal tracking of outcomes and early identification of emerging trends or needs.

[22] Feng and Astell-Burt, 'Lonelygenic Environments'.
[23] Martina Barjaková, Andrea Garnero, and Béatrice d'Hombres, 'Risk Factors for Loneliness: A Literature Review', *Social Science & Medicine* 334 (1 October 2023): 116163, https://doi.org/10.1016/j.socscimed.2023.116163.

Reviews indicate limited research has been undertaken to fully understand how context influences loneliness [24]. This gap in measurement approach has important implications for intervention strategies, particularly in understanding the interplay between individual experiences and environmental factors. The evidence suggests we need multi-level assessment approaches that integrate social and environmental factors alongside individual measures.

The scale of loneliness in NSW is significant. Recent data indicates that around 40% of individuals in NSW experience loneliness, with a 2021 study finding that 37% of NSW residents reported feeling lonely, and 48% of these individuals experiencing loneliness some of the time or often[25]. These statistics highlight the urgent need for systematic intervention approaches. While measurement challenges persist, social prescribing offers new opportunities for comprehensive data collection and analysis through integration of healthcare and community data sources.

At-Risk Populations

Research has identified several populations particularly vulnerable to loneliness, each requiring targeted approaches through social prescribing interventions. Loneliness affects individuals across the lifespan, with evidence of impact in children [26], adolescents [27], emerging adults [28], adults [29], and older adults [30].

[24] Marlee Bower et al., 'The Impact of the Built Environment on Loneliness: A Systematic Review and Narrative Synthesis', *Health & Place* 79 (1 January 2023): 102962, https://doi.org/10.1016/j.healthplace.2022.102962.
[25] Gayle Mental Health Commission of New South Wales, 'Loneliness in Focus', 2023.
[26] Tali Heiman and Dorit Olenik-Shemesh, 'Social-Emotional Profile of Children with and without Learning Disabilities: The Relationships with Perceived Loneliness, Self-Efficacy and Well-Being', *International Journal of Environmental Research and Public Health* 17, no. 20 (January 2020): 7358, https://doi.org/10.3390/ijerph17207358; Nayanah Siva, 'Loneliness in Children and Young People in the UK', *The Lancet Child & Adolescent Health* 4, no. 8 (1 August 2020): 567–68, https://doi.org/10.1016/S2352-4642(20)30213-3.
[27] Heiman and Olenik-Shemesh, 'Social-Emotional Profile of Children with and without Learning Disabilities'.
[28] Susanne Buecker et al., 'Is Loneliness in Emerging Adults Increasing over Time? A Preregistered Cross-Temporal Meta-Analysis and Systematic Review.', *Psychological Bulletin* 147, no. 8 (August 2021): 787–805, https://doi.org/10.1037/bul0000332.
[29] Louise Mansfield et al., 'A Conceptual Review of Loneliness in Adults: Qualitative Evidence Synthesis', *International Journal of Environmental Research and Public Health* 18, no. 21 (January 2021): 11522, https://doi.org/10.3390/ijerph182111522; Rachel A. McGovern, Ericka J. Olschewski, and Camilla J. Hodge, 'Where Have All the Children Gone? A Review of the Presence of Children under 6 Years in Leisure Publication Outlets', *Journal of Leisure Research* 53, no. 2 (15 March 2022): 290–308, https://doi.org/10.1080/00222216.2021.1916799.
[30] Lena Dahlberg et al., 'A Systematic Review of Longitudinal Risk Factors for Loneliness in Older Adults', *Aging & Mental Health* 26, no. 2 (1 February 2022): 225–49, https://doi.org/10.1080/13607863.2021.1876638; Nicolas G. Quan et al., 'A Systematic Review of Interventions for Loneliness among Older Adults Living in Long-Term Care Facilities', *Aging & Mental Health* 24, no. 12 (1 December 2020): 1945–55, https://doi.org/10.1080/13607863.2019.1673311.

Informal carers represent a particularly vulnerable population. The demanding nature of caregiving often limits social interactions and reduces support networks, leading to carers experiencing significant loneliness [31]. Research shows that carers who experience loneliness are more likely to access mental health services compared to those who do not experience loneliness [32]. However, carers who engage in community participation and maintain strong social networks tend to experience better mental health outcomes, as these connections can aid in reducing the emotional burden associated with caregiving [33].

People with workplace injuries represent another significant at-risk population. Research by Aggar et al.[34] demonstrates that workplace injuries often lead to social isolation through multiple pathways: loss of workplace connections, reduced mobility, pain management challenges, and increased mental health symptoms. Their study found that prior to social prescribing intervention, 39% of participants reported never participating in social activities. However, through structured social support, participants' social networks expanded significantly, with those reporting satisfaction with their social support more than doubling from 27% to 60%. This evidence suggests workplace injuries create unique vulnerabilities to loneliness that require targeted intervention approaches.

Geographic and socioeconomic factors also play crucial roles in loneliness risk. Numerous studies document higher levels of loneliness in less advantaged suburbs [35]. However, this is not simply due to a lack of socioeconomic resources, or that people with less money or education have poorer social skills or socially undesirable personality traits. Rather, children and adults in both less advantaged areas and many affluent ones in New South Wales are resident in suburbs that lack safe Third Places (e.g., parks) to play, socialise, and engage in prosocial behaviours that foster community and a sense of belonging.

Health Impacts

The health implications of loneliness extend far beyond emotional wellbeing, affecting both mental and physical health outcomes. Prolonged loneliness and social isolation can significantly impact mental health, increasing the risk of conditions like depression and anxiety. Studies have

[31] Liao et al., 'Loneliness and Social Isolation among Informal Carers of Individuals with Dementia'; Abner Weng Cheong Poon, Lukas Hofstaetter, and Sarah Judd-Lam, 'Social Connectedness of Carers: An Australian National Survey of Carers', *Health & Social Care in the Community* 30, no. 6 (2022): e5612–23, https://doi.org/10.1111/hsc.13987.
[32] Majmudar et al., 'The Association between Loneliness with Health Service Use and Quality of Life among Informal Carers in Australia'.
[33] Mohanty et al., 'A Multilevel Mixed Effects Analysis of Informal Carers Health in Australia'.
[34] Aggar et al., 'Social Prescribing as an Intervention for People with Work-Related Injuries and Psychosocial Difficulties in Australia'.
[35] Lim et al., 'The Prevalence of Chronic and Episodic Loneliness and Social Isolation from a Longitudinal Survey'.

demonstrated a cross-sectional association between lower social isolation and lower loneliness with greater optimism and lower depression among healthy older men and women [36].

Cardiovascular health presents a particularly compelling example of loneliness's physical health impacts. Strong evidence links social isolation to cardiovascular outcomes, with older healthy Australians experiencing poor social health being 42% more likely to develop cardiovascular disease and twice as likely to die from cardiovascular disease over approximately four and a half years follow-up [37]. This increased risk persists even after accounting for established cardiovascular disease risk factors including age, gender, tobacco smoking, systolic blood pressure, high-density lipoprotein, diabetes, and antihypertensive drug use.

Environment, Context & Contributing Factors

Understanding the factors that contribute to loneliness is crucial for effective intervention through social prescribing. The concept of 'lonelygenic environments' [38] highlights how built environment features contribute to isolation. This is often a result of more affordable, distant and sprawling suburbs built almost entirely around the private car, locking people into car dependency for most daily demands and undermining opportunities to sustain basic needs for autonomy, competence, and relatedness.

Social determinants of health (SDoH) frameworks help illustrate the pathways from social health to overall well-being. These frameworks show how social isolation and loneliness form one component of broader health determinants [39]. The main pathways typically progress from poor social health through molecular mechanisms, health behaviours, and chronic disease risk-factors, leading to chronic mental and physical ill-health and mortality, with each step being impacted by socio-demographics, the sociological environment, life events and personality [40].

A recent umbrella review has found consistent evidence that factors relating to economic circumstances and early childhood development themes were associated with increased risk of cardiovascular disease and mortality [41]. This review also demonstrated that factors in the

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[36] Heather Jayne Craig et al., 'Dispositional Optimism and All-Cause Mortality in Older Adults: A Cohort Study', *Psychosomatic Medicine* 83, no. 8 (October 2021): 938, https://doi.org/10.1097/PSY.0000000000000989; Jessie Hu et al., 'Social Isolation, Social Support, Loneliness and Cardiovascular Disease Risk Factors: A Cross-Sectional Study among Older Adults', *International Journal of Geriatric Psychiatry* 36, no. 11 (2021): 1795–1809, https://doi.org/10.1002/gps.5601.
[37] Freak-Poli et al., 'Social Isolation, Social Support and Loneliness as Predictors of Cardiovascular Disease Incidence and Mortality'.
[38] Feng and Astell-Burt, 'Lonelygenic Environments'.
[39] Achamyeleh Birhanu Teshale et al., 'The Relationship between Social Isolation, Social Support, and Loneliness with Cardiovascular Disease and Shared Risk Factors: A Narrative Review', *Archives of Gerontology and Geriatrics* 111 (1 August 2023): 105008, https://doi.org/10.1016/j.archger.2023.105008.
[40] Freak-Poli et al., 'Social Isolation, Social Support and Loneliness as Predictors of Cardiovascular Disease Incidence and Mortality'.
[41] Achamyeleh Birhanu Teshale et al., 'The Role of Social Determinants of Health in Cardiovascular Diseases: An Umbrella Review', *Journal of the American Heart Association* 12, no. 13 (4 July 2023): e029765, https://doi.org/10.1161/JAHA.123.029765.

social/community context and neighbourhood/built environment themes, such as social isolation, fewer social roles, discrimination, ethnicity, neighbourhood, socioeconomic status, violence, and environmental attributes, all play significant roles in health outcomes.

This comprehensive understanding of loneliness in NSW underscores the need for multi-faceted interventions through social prescribing, including:

- Tailored approaches for different at-risk populations
- Integration with existing health services
- Community-based support mechanisms
- Preventative intervention strategies

By understanding these various aspects of loneliness, social prescribing programs can be better designed and implemented to meet the specific needs of NSW communities and populations.

Financial Costs and Economic Impact

The economic implications of loneliness extend beyond individual health impacts to create substantial costs for the NSW budget and state economy. Evidence from social prescribing implementations demonstrates both the costs of inaction and opportunities for cost-effective intervention:

Healthcare System Costs

- Research indicates loneliness increases likelihood of mental health service utilization
- Carers experiencing loneliness show higher rates of healthcare service access
- Older Australians with poor social health are 42% more likely to develop cardiovascular disease, creating significant healthcare costs
- Mental health service access is particularly impacted, with increased utilization rates among isolated individuals

Economic Productivity Impact

- Workforce participation is affected through increased sick leave
- Lost productivity due to mental health impacts
- Reduced community engagement affecting local economies
- Early retirement or reduced work capacity among affected populations

Cost-Effective Solutions Through Social Prescribing

Social prescribing offers evidence-based pathways to reduce these costs through:

1. Preventative Intervention

- Early intervention preventing progression to chronic conditions
- Reduced reliance on clinical services
- Prevention of acute health episodes
- Community-based support reducing clinical service burden

2. Efficient Resource Utilisation

- Leveraging existing community resources
- Integration with current healthcare pathways
- Maximizing volunteer and community sector capacity
- Reduced duplication of services

3. Demonstrated Cost Benefits

- WorkCover context shows successful outcomes through icare NSW implementation
- Reduced compensation duration through structured return pathways
- Lower medication dependence
- Decreased hospital admission rates

4. Implementation Evidence

Current Primary Health Network implementations demonstrate cost-effectiveness but highlight resource needs:

- Northern Sydney PHN showing positive outcomes
- Central and Eastern Sydney PHN implementations
- Southeastern NSW PHN programs
- Need for expanded resourcing to achieve population-level impact

Investment Requirements

To maximize economic benefits, investment is needed in:

- Sustainable funding for proven programs
- Implementation support and coordination
- Systematic scaling of successful models
- Coordinated state and federal funding approaches

The evidence suggests that targeted investment in social prescribing can create significant cost savings through reduced healthcare utilization, improved workforce participation, and more efficient service delivery. While initial investment is required, the preventative nature of these interventions offers substantial long-term economic benefits for both the NSW budget and broader economy.

Part 3: Social Prescribing Pathways

Nature-Based Programs

Nature-based interventions represent one of the most promising pathways within social prescribing, offering both preventative and therapeutic benefits. Research demonstrates that individuals who live near natural settings are more likely to engage in physical activity and social interaction, with corresponding improvements in wellbeing. A national longitudinal study found that having at least 30% of local land-use as parkland supported a quarter reduction in the odds of becoming lonely, with even stronger effects for people living alone [42].

The benefits of nature engagement through social prescribing are particularly noteworthy. Adults who spent just 1-2 hours per week in nature showed a 69% increase in the odds of finding relief from loneliness at 4 months, with benefits increasing to 110% at 16 months [43]. However, implementation success requires addressing practical barriers. Research shows that a lack of companionship is a major obstacle to nature engagement, highlighting the importance of structured programs and group activities within the social prescribing framework.

These nature-based prescriptions have already demonstrated success in reducing blood pressure, depression, and anxiety [44]. The next step is to conduct randomised trials specifically examining their effectiveness in reducing loneliness, ensuring cost-effective and sustainable implementation.

Cultural and Arts Activities

Cultural and arts-based programs offer powerful pathways for social connection, particularly given their ability to foster group identity and cultural belonging. Australian Aboriginal and Torres Strait Islander peoples have the longest unbroken culture in the world, dating back at least 65,000 years. Cultural practices such as welcome to country ceremonies, storytelling, song, dance, and visual arts, play a strong role in the continuation of cultural identity, community cohesion, and health and wellbeing. Contemporary examples include work on music as a cultural determinant of health from the Griffith University Conservatorium of Music [45].

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[42] Thomas Astell-Burt et al., 'More Green, Less Lonely? A Longitudinal Cohort Study', *International Journal of Epidemiology* 51, no. 1 (1 February 2022): 99–110, https://doi.org/10.1093/ije/dyab089.
[43] Thomas Astell-Burt, Michael A. Navakatikyan, and Xiaoqi Feng, 'Contact with Nature May Be a Remedy for Loneliness: A Nationally Representative Longitudinal Cohort Study', *Environmental Research* 263 (15 December 2024): 120016, https://doi.org/10.1016/j.envres.2024.120016.
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[45] Brigitta Scarfe et al., 'Music as a Determinant of Health among First Nations People in Australia: A Scoping Narrative Review', *Health Promotion Journal of Australia* 35, no. 4 (2024): 924–35, https://doi.org/10.1002/hpja.865; Naomi Sunderland et al., 'Music Across Generations: Exploring Intergenerational First Nations Musical Practices as Cultural Determinants of Health', *Family & Community Health* 47, no. 4 (December 2024): 294, https://doi.org/10.1097/FCH.0000000000000413.

First nations leadership was also foregrounded in the 2023 Creative Australia report 'Connected Lives: Creative solutions to the mental health crisis' – as was support for a national social prescribing scheme[46].

Recent evidence from controlled trials shows significant improvements in participant outcomes. For instance, arts-based social programs such as choir singing, creative writing, visual arts, and dance classes, help isolated people to form meaningful group identities, from which social support, self-esteem, meaning and purpose, and mental wellbeing develop and improve [47]. Practical applications have shown particular success with specific populations; visual art immersion at the Art Gallery of NSW has produced positive results among children with developmental disorders and anxiety disorders, while photo elicitation has effectively connected and activated older people in aged care services.

The effectiveness of arts-based interventions within social prescribing is further supported by international evidence. The UK's All Party Parliamentary Working Group creative health review recommended that creative health 'should form an integral part of a 21st-century health and social care system – one that is holistic, person-centred, and which focuses on reducing inequalities and supporting people to live well for longer' [48]. In Canada, a review of evidence found a strong connection between arts participation and both general and mental health [49]. In the USA, arts engagement has been framed as a health behaviour, offering an opportunity to address mental health inequities [50].

[46] Australian Council for the Arts, 'Connected Lives: Creative Solutions to the Mental Health Crisis', 2022, https://creative.gov.au/wp-content/uploads/2023/02/Connected-Lives-Creative-solutions-to-the-mental-health-crisis-Web-version.pdf.
[47] Genevieve A. Dingle et al., '"To Be Heard": The Social and Mental Health Benefits of Choir Singing for Disadvantaged Adults', *Psychology of Music* 41, no. 4 (July 2013): 405–21, https://doi.org/10.1177/0305735611430081; Saoirse Finn et al., 'Expanding the Social Cure: A Mixed-Methods Approach Exploring the Role of Online Group Dance as Support for Young People (Aged 16–24) Living with Anxiety', *Frontiers in Psychology* 14 (17 October 2023), https://doi.org/10.3389/fpsyg.2023.1258967; Elyse Williams et al., 'Enhancing Mental Health Recovery by Joining Arts-Based Groups: A Role for the Social Cure Approach', *Arts & Health* 12, no. 2 (3 May 2020): 169–81, https://doi.org/10.1080/17533015.2019.1624584.
[48] NCCH, 'National Centre for Creative Health'.
[49] 'Canadians' Arts Participation, Health, and Well-Being'.
[50] Rodriguez et al., 'Arts Engagement as a Health Behavior'.

Physical Activity and Leisure

Physical activity promotes physical and mental health across the life span [51] and when it is combined with social interaction, provides a crucial pathway within social prescribing. Research indicates that exercise in natural settings produces significantly greater benefits than indoor activities, with improvements visible in as little as five minutes. These benefits include enhanced feelings of revitalisation, positive engagement, and decreased tension, confusion, anger, and depression [52].

Leisure activities, defined as "voluntary activities not related to employment that are engaged in during free time, predominantly for enjoyment" [53], offer varied engagement options through social prescribing. These activities can be categorized into passive and active forms, each serving different needs and preferences. Passive leisure activities encompass more sedentary and individual pursuits such as reading, playing games and watching television, while active leisure activities include physical activity, travel and volunteering [54].

The evidence for leisure activities' contribution to health and wellbeing is substantial, with documented impacts on physical, psychological and social wellbeing [55]. This has been evidenced across the lifespan [56]. Recent studies have demonstrated particular success with specific activities: volunteering has emerged as a promising avenue for reducing loneliness in older age [57], while

[51] João Breda et al., 'Promoting Health-Enhancing Physical Activity in Europe: Current State of Surveillance, Policy Development and Implementation', *Health Policy (Amsterdam, Netherlands)* 122, no. 5 (May 2018): 519, https://doi.org/10.1016/j.healthpol.2018.01.015.
[52] J. Thompson Coon et al., 'Does Participating in Physical Activity in Outdoor Natural Environments Have a Greater Effect on Physical and Mental Wellbeing than Physical Activity Indoors? A Systematic Review', *Environmental Science & Technology* 45, no. 5 (March 2011): 1761–72, https://doi.org/10.1021/es102947t.
[53] Daisy Fancourt et al., 'How Leisure Activities Affect Health: A Narrative Review and Multi-Level Theoretical Framework of Mechanisms of Action', *The Lancet Psychiatry* 8, no. 4 (1 April 2021): 3, https://doi.org/10.1016/S2215-0366(20)30384-9.
[54] Dongwook Cho, Jay Post, and Sung Kyeom Kim, 'Comparison of Passive and Active Leisure Activities and Life Satisfaction with Aging', *Geriatrics & Gerontology International* 18, no. 3 (2018): 380–86, https://doi.org/10.1111/ggi.13188.
[55] Louise Mansfield, 'Leisure and Health – Critical Commentary', *Annals of Leisure Research* 24, no. 3 (27 May 2021): 283–94, https://doi.org/10.1080/11745398.2020.1767664.
[56] Bodil Elisabeth Valstad Aasan et al., 'The Relative Importance of Family, School, and Leisure Activities for the Mental Wellbeing of Adolescents: The Young-HUNT Study in Norway', *Societies* 13, no. 4 (April 2023): 93, https://doi.org/10.3390/soc13040093; Quan et al., 'A Systematic Review of Interventions for Loneliness among Older Adults Living in Long-Term Care Facilities'; Bryan Smale, Jeffrey Wilson, and Nnamdi Akubueze, 'Exploring the Determinants and Mitigating Factors of Loneliness among Older Adults', *Wellbeing, Space and Society* 3 (1 January 2022): 100089, https://doi.org/10.1016/j.wss.2022.100089.
[57] Samia C. Akhter-Khan et al., 'Caregiving, Volunteering, and Loneliness in Middle-Aged and Older Adults: A Systematic Review', *Aging & Mental Health* 27, no. 7 (3 July 2023): 1233–45, https://doi.org/10.1080/13607863.2022.2144130.

structured physical activity programs have shown measurable reductions in loneliness across adult populations [58].

The combination of physical activity with social engagement appears to create synergistic effects. When exercising in natural settings, participants report greater enjoyment and satisfaction with outdoor activity and declare a greater intent to repeat the activity at a later date [59]. This suggests that social prescribing programs combining physical activity, nature engagement, and social interaction may be particularly effective in addressing loneliness.

Social Connection Programs

Social connection programs within social prescribing frameworks offer structured pathways to meaningful engagement and community participation. Research demonstrates that these programs are most effective when they incorporate multiple elements and address specific population needs.

For older adults, social connection programs that combine skill development with social interaction show particular promise. Studies have demonstrated that participation in structured group activities can reduce loneliness while improving various health outcomes [60]. Evidence shows that maintaining close relationships with 3 to 8 relatives and having three or more close friends significantly reduces cardiovascular disease risk, particularly when combined with regular social activities[61].

Cultural and arts-based programs provide especially effective pathways for social connection. As evidenced in First Nations contexts, cultural practices such as welcome to country ceremonies, storytelling, song, dance, and visual arts play a strong role in the continuation of cultural identity, community cohesion, and health and wellbeing[62]. Arts-based social programs such as choir singing, creative writing, and dance classes help isolated people form meaningful group identities,

[58] Fabian Pels and Jens Kleinert, 'Loneliness and Physical Activity: A Systematic Review', *International Review of Sport and Exercise Psychology* 9, no. 1 (1 January 2016): 231–60, https://doi.org/10.1080/1750984X.2016.1177849.
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[60] Dahlberg et al., 'A Systematic Review of Longitudinal Risk Factors for Loneliness in Older Adults'.
[61] Achamyeleh Birhanu Teshale et al., 'Gender-Specific Aspects of Socialisation and Risk of Cardiovascular Disease among Community-Dwelling Older Adults: A Prospective Cohort Study Using Machine Learning Algorithms and a Conventional Method', *J Epidemiol Community Health*, 4 June 2024, https://doi.org/10.1136/jech-2023-221860.
[62] Scarfe et al., 'Music as a Determinant of Health among First Nations People in Australia'.

from which social support, self-esteem, meaning and purpose, and mental wellbeing develop and improve[63].

The effectiveness of social connection programs is enhanced when they:

- Address specific barriers to participation identified through research
- Incorporate cultural sensitivity and community-specific elements
- Provide structured opportunities for ongoing engagement
- Create pathways for developing and maintaining relationships
- Support both formal and informal social connections
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Research indicates that successful social connection programs must be sustained over time to achieve lasting benefits. A longitudinal study by Freak-Poli et al.[64] found that social support interventions showed increasing effectiveness over time, suggesting the importance of long-term program support through social prescribing frameworks.

Case Study Evidence: The Impact of Social Prescribing

The following anonymous client testimony illustrates the transformative potential of social prescribing in addressing loneliness and isolation:

"Recovering from injury at home on Workers Compensation in my previous employment, I found myself isolated from workmates and dwelling negatively. That negativity spread further than my occupation, into all areas of my life as I lost perspective and self-belief and slipped into a depression that isolated me further from friends and family. Isolation is like fertile soil for growing mental ill-health.

Through a social prescribing program operated by PCCS, I was slowly brought back to reality and health, with the help of a social worker who listened and helped address some challenges I was having with relationships as well as alcohol, and her persistent encouragement to join some social activity groups in the program. Social connection was like a muscle I had to slowly exercise after an injury, but in a couple of months my confidence had returned and I re-entered the employment market. I've been employed continuously for the 6 years since that time and I'm socially more connected with friends, my partner, my hobbies and some community service too."

This case study demonstrates the comprehensive impact of social prescribing, illustrating how structured support and guided reintegration into social activities can lead to sustained improvements in mental health, social connection, and employment outcomes.

[63] Dingle et al., '"To Be Heard"'; Finn et al., 'Expanding the Social Cure'; Williams et al., 'Enhancing Mental Health Recovery by Joining Arts-Based Groups'.
[64] Freak-Poli et al., 'Social Isolation, Social Support and Loneliness as Predictors of Cardiovascular Disease Incidence and Mortality'.

Part 4: Implementation Framework

Healthcare Integration

Social prescribing must be systematically integrated into existing healthcare pathways to ensure effective implementation. Evidence from our Queensland trial demonstrates that when properly integrated, social prescribing shows significant improvements in loneliness and trust compared to standard GP care, with benefits sustained over an 18-month period [65]. This integration is particularly crucial given that access to mental health services such as psychiatry and clinical psychology remains limited outside metropolitan areas and expensive even in well-served areas.

Integration requires particular attention to mental health services linkages, especially given the evidence that loneliness increases the likelihood of mental health service utilisation [66]. By creating preventative pathways through social prescribing, we can potentially reduce the burden on clinical services while providing more appropriate community-based support.

Evidence from existing Primary Health Network implementations in Northern Sydney, Central and Eastern Sydney, and Southeastern NSW demonstrates both the potential and current limitations of integration efforts. While these programs show promising outcomes (such as significant improvement in people's health-related quality of life, mental wellbeing, general wellbeing, and self-reported health, as well as a significant reduction in their psychological distress), their effectiveness is constrained by resource limitations, highlighting the need for systematic support and sustainable funding mechanisms.

Workforce Development and Capacity Building

Successful implementation of social prescribing requires leveraging and enhancing existing healthcare workforces, particularly within primary care settings. General practice teams and community pharmacies represent established, trusted touchpoints with significant opportunity for expanded roles in social prescribing. Current policy reforms focusing on multidisciplinary care teams through Strengthening Medicare create an ideal environment to integrate social prescribing into existing workflows. By supporting these frontline healthcare professionals with training, resources, and appropriate incentives, we can build sustainable capacity for social prescribing without creating entirely new workforce structures. This approach aligns with broader healthcare reforms while maximizing the potential of established professional relationships and community trust. Investment in workforce development should encompass training programs for GPs, practice nurses, and pharmacy staff in social prescribing principles, alongside integration into existing health assessment and care planning processes. Enhanced roles for practice nurses and pharmacy assistants in social needs assessment, combined with professional development pathways that recognize social prescribing competencies, will ensure sustainable implementation.

[65] Dingle et al., 'A Controlled Evaluation of Social Prescribing on Loneliness for Adults in Queensland'.
[66] Majmudar et al., 'The Association between Loneliness with Health Service Use and Quality of Life among Informal Carers in Australia'.

Through incentives that support multidisciplinary approaches to patient care, we can create a robust foundation for social prescribing within existing healthcare frameworks.

Community Partnerships

Successful implementation requires robust partnerships with community organisations developed through co-design approaches. As Feng and Astell-Burt [67] emphasize, we must co-design with community to ensure social prescribing programs reflect local needs and resources while building on existing community strengths.

Cultural engagement provides a powerful example of effective community partnership. Research demonstrates that cultural practices play a strong role in community cohesion and health outcomes. Contemporary examples from the Griffith University Conservatorium of Music show how music serves as a cultural determinant of health [68], highlighting the importance of culturally sensitive program design.

The development of Third Places - safe spaces for social interaction and community engagement - requires careful attention to local contexts and needs. These spaces must support various social prescribing activities while fostering community and sense of belonging. Research shows that communities lacking such spaces experience higher levels of loneliness [69], making their development crucial to successful implementation.

Government Framework

Government support must address both systemic and practical implementation needs through sustainable funding mechanisms and policy frameworks. Drawing from our research, effective frameworks should:

- Formally recognise the various factors that contribute to loneliness, including environmental and social determinants
- Support practical interventions through social prescribing
- Provide sustainable funding that reflects the real cost of service delivery
- Enable integration between health and social care policies

The framework should particularly address the integration of health and social care policies, recognising that social prescribing bridges traditionally separate domains. This integration is crucial given the evidence linking social isolation to both mental and physical health outcomes [70].

[67] Feng and Astell-Burt, 'Lonelygenic Environments'.
[68] Scarfe et al., 'Music as a Determinant of Health among First Nations People in Australia'; Sunderland et al., 'Music Across Generations'.
[69] Lim et al., 'The Prevalence of Chronic and Episodic Loneliness and Social Isolation from a Longitudinal Survey'.
[70] Freak-Poli et al., 'Social Isolation, Social Support and Loneliness as Predictors of Cardiovascular Disease Incidence and Mortality'.

Monitoring and Evaluation

Implementation success requires robust evaluation frameworks capturing multiple outcome domains. Our research demonstrates the importance of measuring:

Health Outcomes

- Physical health impacts, including cardiovascular risk reduction
- Mental health improvements
- Social connection metrics
- Quality of life measures

Implementation Metrics

- Service accessibility and uptake
- Program sustainability
- Workforce development
- Resource utilization

Economic Measures

- Healthcare service utilization
- Cost-effectiveness analyses
- Broader economic impacts
- Return on investment

The evaluation framework must capture both immediate and long-term outcomes, reflecting evidence that social prescribing benefits often increase over time. For example, research shows that nature-based programs demonstrate increasing effectiveness across extended periods, with benefits rising from 69% improvement at 4 months to 110% at 16 months [71].

Successful implementation requires attention to these various framework elements while ensuring programs remain community-driven and evidence-based. Evidence from existing programs demonstrates that when these elements align properly, social prescribing can create sustainable improvements in individual and community wellbeing [72].

[71] Astell-Burt, Navakatikyan, and Feng, 'Contact with Nature May Be a Remedy for Loneliness'.
[72] Dingle et al., 'A Controlled Evaluation of Social Prescribing on Loneliness for Adults in Queensland'; Sharman, Jones, and Dingle, '1-Year Evaluation of the Social Prescribing Trial in Brisbane North'.

Part 5: Recommendations and Conclusions

The evidence presented throughout this submission demonstrates that social prescribing offers a comprehensive, evidence-based approach to addressing loneliness in New South Wales. Through our research and practical implementation experience, we have shown that social prescribing can effectively bridge the gap between healthcare services and community supports, creating sustainable pathways to social connection and improved wellbeing.

Key Recommendations

1. Establish a Comprehensive Social Prescribing Framework

The NSW Government should implement a state-wide social prescribing framework that:

- Creates systematic referral pathways through primary healthcare
- Supports the training and deployment of Link Workers
- Enables integration between health and community services
- Provides sustainable funding mechanisms
- Establishes clear evaluation protocols

2. Address Systemic Factors

While implementing social prescribing, attention must also be paid to the broader environmental and social contexts that influence loneliness. This includes:

- Recognition of how built environments can either foster or inhibit social connection
- Investment in Third Places that bring people together
- Support for place-based solutions that enhance community connection
- Development of policies that promote walkable, sociable neighbourhoods

3. Support Evidence-Based Programs

Our research demonstrates the effectiveness of various social prescribing pathways, including:

- Nature-based programs that combine physical activity with social interaction
- Cultural and arts activities that foster group identity and belonging
- Leisure-based interventions that enhance social connectedness
- Volunteering, education, improved access to supports and programs

4. Establish Support Infrastructure and Evaluation Framework

As social prescribing expands across NSW, investment in support infrastructure is crucial for success. Drawing on ASPIRE's established position as Australia's foremost authority in social prescribing research, education and policy development, the NSW Government should:

- Support the establishment of a state collaborating centre of excellence through ASPIRE to guide service development, improvement, leadership and change management
- Invest in workforce development strategies including education, training and professional networking support for referrers, link workers, and the future workforce

- Create a standardized minimum data set (MDS) to enable systematic monitoring and evaluation of outcomes
- Fund implementation science and health systems research to inform ongoing service development and improvement
- Facilitate digitally-enabled implementation through assessment tools and online directories of community services
- Support knowledge translation and policy development through ASPIRE's expert panels and research networks
- Enable cross-sector collaboration and knowledge sharing through established networks and partnerships

Implementation Priorities

To effectively implement these recommendations, we propose the following priorities:

Short-term Actions

- Establish pilot programs in diverse communities across NSW
- Develop standardised training for Link Workers
- Create evaluation frameworks that capture both individual and community outcomes
- Build partnerships with existing community organisations

Medium-term Development

- Expand successful pilot programs to regional and remote areas
- Integrate social prescribing into primary healthcare pathways
- Develop sustainable funding mechanisms
- Build capacity in community organisations

Long-term Goals

- Achieve comprehensive coverage across NSW
- Demonstrate measurable improvements in population health outcomes
- Reduce healthcare system burden through preventative approaches
- Create more connected, resilient communities

Conclusion

The evidence is clear: loneliness represents a significant public health challenge that requires both practical interventions and systemic change. Social prescribing offers a proven pathway for creating this change, connecting individuals with community-based activities and supports that can effectively reduce loneliness and enhance wellbeing.

Our research demonstrates that various interventions - from nature-based programs and cultural activities to physical exercise and pet companionship - can effectively reduce loneliness when delivered through a structured social prescribing framework. The case studies and trial results presented show how social prescribing creates pathways to sustained improvements in mental health, social connection, and overall wellbeing.

The economic and social costs of inaction on loneliness are substantial, evidenced by increased risks of cardiovascular disease, mental health challenges, and reduced community cohesion. However, the opportunities for positive change through coordinated government action and community engagement are equally significant. Social prescribing represents a proven pathway for realising these opportunities, connecting individuals with activities and supports that evidence shows can reduce loneliness and enhance wellbeing.

As we look to the future, addressing loneliness must be recognized as a central priority in building healthy, resilient communities across New South Wales. The evidence and recommendations presented in this submission provide a clear roadmap for achieving this vital goal through the implementation of comprehensive social prescribing programs, supported by necessary systemic changes. This combined approach offers the best opportunity for creating lasting positive change in the lives of those affected by loneliness in our communities.

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Appendix A: Social Prescribing Overview

The Basic Model

Social prescribing is a transformative model that serves as a bridge between formal care and community-based supports. The model (Figure 1) involves a health or social care professional, or other trusted referrer, 'prescribing' a person to a link worker, who assists the person to co-design their own personalised plan, identifying opportunities and avenues for enrichment to enhance their quality of life.

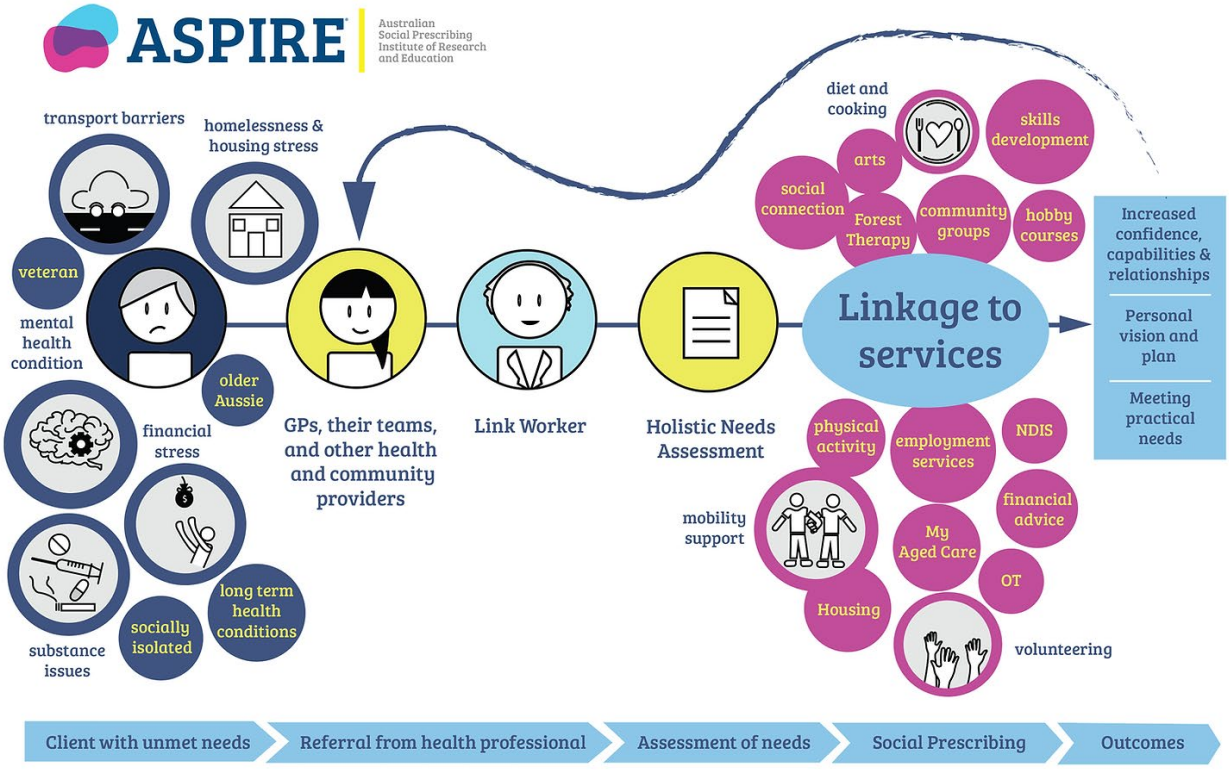

Figure 1: Social Prescribing model

Healthcare Access Points and Support Pathways

Healthcare providers, particularly GPs and pharmacists, serve as crucial access points for social prescribing. These trusted professionals often have regular contact with people experiencing loneliness or isolation through annual check-ups and routine healthcare visits, making them ideally positioned to identify needs and facilitate connections to social support. Through these established healthcare relationships, social prescribing offers an opportunity to connect patients with non-medical support within the community, addressing loneliness and isolation without relying solely on clinical interventions.

Community Activities and Resources

Because a lot of the 'prescriptions' can be for low-cost sustainable activities like bushwalking clubs, cooking groups, art groups, gardening groups, movie clubs, meditation groups, and more, these prescriptions offer more sustainable, longer-term strategies for addressing social, emotional, health and environmental needs. Without social prescribing, these resources often remain under-utilised due to a lack of awareness.

A Holistic Approach to Wellbeing

Social Prescribing is a way of referring people to a range of local, non-medical activities to support the person's health and social wellbeing in a holistic and self-empowering way. It provides an opportunity for people to co-design their personalised plan to overcome environmental and societal barriers that prevent them from fully engaging in life. In times of increasing constraints on funding and workforce, social prescribing offers opportunities to use alternative workforces and strategies to improve health and social wellbeing. It complements medical, social and welfare type models of care by providing a personalised approach to addressing social determinants of health by utilising free or low costs community assets. Social determinants of health are social, economic, and environmental factors that influence health. In essence, social prescribing tackles the root causes of health disparities to create a healthier, more equitable society.

Benefits and Outcomes

Social Prescribing can significantly improve wellbeing and quality of life and reduce unnecessary health, social and wellbeing costs by addressing underlying factors [73] Concurrently, it can raise awareness and extend support to informal carers, families, and loved ones, recognising their unique needs and bolstering their ability to provide care and support. Engaging in social activities together can help strengthen relationships and provide shared experiences. Social prescribing can thus create improvements in social wellbeing, identify, and mental health, whilst also connecting communities closer together [74]. This holistic approach creates a more balanced and compassionate health and social wellbeing ecosystem, making social prescribing a strategic imperative for improving health and wellbeing in Australia.

[73] Aggar et al., 'Social Prescribing as an Intervention for People with Work-Related Injuries and Psychosocial Difficulties in Australia'; Aggar et al., 'Social Prescribing for Individuals Living with Mental Illness in an Australian Community Setting'.
[74] Dingle et al., 'A Controlled Evaluation of Social Prescribing on Loneliness for Adults in Queensland'.

Appendix B: icare Workplace Injury Reports

icare™
foundation

COMMERCIAL MIND
SOCIAL HEART

Social and Economic Impact Report Summary

Introduction

icare Foundation commissioned Urbis to develop our first Social and Economic Impact Report, to undertake a social cost benefit analysis (SCBA) of its investments and a review of the internal influence of the Foundation.

The report was developed in three keys stages: data review and gap analysis, consultation, and thematic and social cost benefit analysis.

This document is a summary of Urbis' key fundings. They found that of the 13 investments included in the SCBA, 12 returned a positive social cost benefit ratio: the sum of the benefits for icare participants, employers and broader society was greater than icare's investment.

The analysis found a strong degree of strategic alignment with icare focus outcomes areas, and that all investments also delivered a broader societal benefit.

It also found that our investment in research has successfully catalysed further investment across multiple sources, increasing its reach and impact.

Overall, the outcomes of the report were extremely strong, and the Foundation will respond to the recommendations as it continues to build momentum.

Disclaimer: This report represents a summary of Urbis' key findings and has been supplemented by icare with information and findings from the full Urbis Social and Economic Report and by way of additional history on the icare Foundation. This document has been prepared with all due diligence and care, based on the best available information at the time of publication.

September 2019

About us

History of icare Foundation

icare Foundation was established in 2016 to enable icare to achieve its role as a social insurer. Our aim is to create an integrated and strategic focus for icare's social investment activities, to support innovation in our ecosystem and maximise positive social outcomes for icare customers and the people of New South Wales (NSW).

Our purpose

The Foundation supports the three largest icare schemes: Lifetime Care, Workers Insurance, and the Treasury Managed Fund. Our purpose is to help icare achieve its vision by supporting innovations that address the biggest challenges facing our schemes – preventing injury, improving recovery and enhancing the quality of life for icare customers.

Our target outcomes

Prevention: Positive, healthy workplace cultures and systems that support reduction in physical and psychological injury.

Recovery: Injured workers who are in the most need are accessing new recovery and return to work pathways.

Quality of life: New services and systems of support are improving quality of life for the seriously injured and their families.

Our four pathways for funding

Research	Seed Innovation	Capacity Building	Scale
Building knowledge within a specific field that translates to outcomes for our priority cohorts.	Seeding and testing new ideas to generate an evidence base and create a measurable impact for our customers.	Capacity building for not-for-profits and social entrepreneurs to strengthen their ability to deliver impact.	Supporting innovations with an established evidence base to deepen or broaden their impact.

Plus Social

Plus Social is a care coordination and social participation intervention for injured workers. The program, established by icare's Medical Office, is structured around a social prescribing model for people experiencing psychosocial difficulties and social isolation as a result of their injury. The program involves:

1. Holistic needs assessment
2. Customised care planning
3. Linkage and referrals to health and social services
4. Enrolment in social activities.

icare Foundation provided $1.4m in seed funding between 2017 and 2019.

BCR result commentary

A formal evaluation of Plus Social was conducted indicating strong improvements for participants across a range of wellbeing measures, suggesting a greater capacity for work readiness. This is reflected in the positive cost benefit ratio for the pilot program. These results are now being considered by the icare Medical Office and next steps will be developed with icare Foundation, to ensure continuation of this kind of support for workers.

The evaluative SCBA indicates for every $1 invested, $3.80 of benefit was created.

Foundation investment to date =

1.4m

Benefit cost ratio =

3.8

263 participants in program

137 participants in evaluation

40% found the program extremely supportive in improving general wellness

29% found the program extremely supportive in improving social connectedness

23% felt extremely more confident in their ability to return to work or engage in the community

25% increase in quality of life (WHO-QOL-BREF Wellbeing Scale)

15% increase in the number of participants who held a certificate of capacity

Increase in the average number of approved work hours for those who came into the program holding a certificate of capacity.

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Appendix C: Social prescribing as an intervention for people with work-related injuries and psychosocial difficulties in Australia

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RESEARCH ARTICLE

Social prescribing as an intervention for people with work-related injuries and psychosocial difficulties in Australia

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Abstract: Psychosocial interventions that encourage optimism and connectedness can promote workplace injury recovery and improve wellbeing. A mixed-methods evaluation of a twelve-week program for injured workers in Sydney, Australia, explored three research questions: if a social prescribing approach contributed to (1) increased social and economic participation, (2) improved psychological functioning and quality of life, and (3) decreased health service utilisation. Retrospective analysis of pre- and post-intervention data was undertaken, involving quantitative indicators of social, economic, and health status using validated psychosocial assessment tools (n = 175). These findings were augmented with data from the insurance regulator (n = 177) and insights from link worker documentation of participant activity (n = 178), a program satisfaction survey (n = 167), and participant interviews (n = 44). The social prescribing program was associated with significant improvements in frequency and confidence in participating in social activities and returning to work, in all measures of biopsychosocial wellbeing, and in reducing health service use. Qualitative information identified a range of personal improvements, including greater self-awareness, social connections, and ability to cope with the effects of injury and employment loss. This is the first known Australian study to evaluate a social prescribing intervention for psychosocial rehabilitation for injured workers in Australia. These findings suggest that a social prescribing approach is effective, but further consideration of barriers, including workplace characteristics and procedural difficulties in accessing occupational rehabilitation services, is needed.

Keywords: psychosocial support systems, occupational injuries, return to work, social participation, self-management

1 Introduction

Social prescribing has been shown to increase the quality of life for a range of people with health and psychosocial needs, but has not as yet been tested as an intervention to support injured workers[1–4]. In 2017, a not-for-profit health organisation introduced a social prescribing program for injured workers that aimed to address psychosocial difficulties (including pain, distress, isolation, and unmet welfare needs) and increase confidence and capacity to recover from injury and employment loss. Using quantitative and qualitative data collected from program participants, this paper will describe the outcomes of the social prescribing intervention, including benefits identified in the model of care, and suggest ways to further enhance recovery support for injured workers with psychosocial difficulties.

1.1 Psychosocial issues in workplace injury and rehabilitation

In 2016-2017, 89% of serious workers' compensation claims in Australia were due to physical injury and musculoskeletal disorders, with mental health conditions accounting for 7%, and other diseases 4%[5]. Work disability income support is estimated to have cost $37 billion Australian dollars during the 2015-2016 financial year, with 6.5 million people accessing employer provided leave entitlements and 786,000 accessing income support or compensation from government or private sources[6]. Compensation and income support processes operate in adversarial and scrutinising ways, and engaging in these has been shown to create stress and negatively impact mental health, functional abilities, social inclusion, and quality of life[7,8]. Receiving inadequate care or support after a workplace injury is associated with increased risk of psychosocial difficulties in returning to work[9,10]. In-

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terventions that act to increase individual empowerment and psychosocial wellbeing may increase resilience in engaging with needed compensatory, health and welfare systems, as well as promote quicker recovery from the workplace injury itself[7].

Having strong family relationships and social connections, an adaptive and optimistic attitude, and a capable and resilient sense of self have been shown to be conducive to a quicker return to work after injury[11]. Workplace features, such as feeling effective and supported in one's work role, and having a strong workplace culture (that does not include bullying, excessive performance expectations, or unsafe practices) also contribute to injury prevention and recovery[12]. Aspects that may reduce motivation to return to work after injury include being of older age, having younger children, experiencing family problems, and having a perception of the workplace as dangerous or of the employer as being unable or unwilling to allow for work role modifications[13]. In one large retrospective analysis of occupational rehabilitation users in Victoria, Australia, the factor that most predicted lower likelihood of returning to work was psychiatric treatment, but better outcomes were achieved by those in this group if they engaged in services that assisted in finding new employment rather than returning to their previous workplace[14]. A collaborative approach to workplace injury treatment and rehabilitation is recommended by physicians (involving the person, current or prospective employers, their insurer, the treating doctor, and any rehabilitation or support providers), giving consideration to any psychosocial barriers and needs that may hinder recovery[15].

The injured person's experiences of the injury and its contributing causal factors, their beliefs and expectations about recovery, and their motivation to return to work also need to be considered in rehabilitation processes. A Dutch study of 299 workers with lower back pain found that those who had higher job satisfaction and higher expectations of treatment returned to work earlier than those who did not[16]. A similar Canadian study of 1566 workers (with soft tissue injuries to the back or legs) found that recovery expectations accounted for one-sixth of the variance in time off work, and positive recovery expectations were associated with pain reduction and functional improvements[17]. An Australian study of 174 workers with musculoskeletal injuries found that despite high rates of desire or perceived social advantages in returning to work, specific psychological barriers including "fear of pain and re-injury, catastrophizing, and emotional distress" delayed or prevented return[18].

Psychosocial interventions can be effective in promoting workplace injury recovery. For example, a pain management education and counselling intervention tested on 34 Americans (who were unable to return to work due to back pain and fear and avoidance behaviours) found that compared to an equivalent control group, the intervention group had a significantly lower amount of time off work[19]. Ideally, if the goal is to increase the likelihood and expediency of returning to work, it is suggested that interventions target both intrapersonal aspects (such as coping strategies and supports) and characteristics of the workplace (such as stress, conflict, and safety) that engender or function as psychosocial barriers[20].

1.2 Social prescribing

Social prescribing has been shown to increase the quality of life for a range of people with health and psychosocial needs[1–4]. It emerged as a support intervention from the recognition that health services were generally not able to effectively respond to psychosocial needs (psychological, social, emotional, and/or spiritual needs) and structural inequities (such as poverty and unemployment) that impact wellbeing[3,21]. Social prescribing uses a person-centred model of care that involves wellbeing professionals assessing and referring participants to non-medical activities and services that can assist in addressing barriers to healthier thoughts and behaviours, reducing isolation and disadvantage, and improving overall quality of life[22]. Internationally, social prescribing interventions have generally targeted people living with chronic physical or mental health issues or disabilities, and who have limited social and financial resources to maintain their health and wellbeing. Social prescribing aims to empower people to increase behaviours that promote physical and psychosocial health, including exercising, practising positive thinking, and participating in social activities, and by doing so increase their confidence, sense of control, and health status[23]. It also acts to link people with services and education that can help address the social disadvantages that they are experiencing[24]. To date, there are no known published accounts of the use of social prescribing interventions to increase the wellbeing of injured workers.

The majority of published peer-reviewed studies on social prescribing are systematic reviews of program evaluations conducted in the United Kingdom. General benefits identified across programs include increased social participation, decreased health service usage, and greater empowerment and confidence[1–4]. Social prescribing intervention evaluations generally report effectiveness in enhancing social inclusion, promoting healthier living, and improving self-esteem and wellbeing; and are largely positively received by participants[22,25–34]. The link worker role was identified as a key feature of success in many studies, particularly in their frequent and sup-

Table 1. Data collection tools

Data provided by participants		
Program start	During program	Program end
Pre-questionnaire (n = 200)	Link worker documentation (n = 178)	Post-questionnaire (n = 175)
(1) Occupational, social and health details	Participant referrals	Occupational, social, and health details (repeated)
(2) Psychometric assessment using 6 validated tools WHO-QOL-BREF CANSAS EQ-5D-5L K10 UCLA Loneliness Scale Pain scale	Activities attended	Psychometric assessment (repeated) Program satisfaction survey (n = 167) Semi-structured interview transcripts (n = 44)
(3) Demographic information		
(4) Summary claims information (n =171)		

portive contact. Limitations in social prescribing program evaluations include small sample sizes, and a lack of valid measures and longitudinal designs[1–4].

2 Methods

In 2017, a social prescribing program was developed and offered free to people aged 18 to 65 years who had been unable to return to work after a work-related injury acquired between six months and three years prior, or who had returned to work on reduced hours or duties, and were living in the general community within the area of greater Sydney, Australia. A further eligibility criterion was assessment by a general practitioner as experiencing psychosocial difficulties and likely to benefit from increased social participation; exclusion criteria were receiving acute inpatient treatment, having significant cognitive impairment, or participating in an alternative program for injured workers. The twelve week program was provided by qualified and experienced link workers (typically a social worker or similar), it involved holistic needs assessment, customised care planning, linkage and referral to appropriate locally-based health and social services, enrolment in social and therapeutic activities, and follow-up contact. Activities organised for participants included art and craft, yoga and relaxation, equine therapy, and social groups. Referrals were made to external organisations for services such as financial or relationship counselling, mental health support groups, housing and other assistance.

Retrospective analysis of de-identified data collected between July 2017 to March 2019 was used to independently evaluate the social prescribing program for injured workers, using a mixed method approach and measuring changes over time (see Table 1). The research questions explore whether a social prescribing approach contributed to (1) increased social and economic participation, (2) improved psychological functioning and quality of life, and (3) decreased health service utilisation for individuals with a work-related injury and psychosocial difficulties living in the community.

3 Data collection and analysis

Within-subject pre- and post-intervention statistical analysis involved self-reported frequency data pertaining to social and economic participation, and health service utilisation, and the following validated biopsychosocial tools:

(1) World Health Organisation Quality of Life (WHO-QOL-BREF): Overall quality of life and health satisfaction across physical, psychological, social, and environmental domains[41];

(2) Camberwell Assessment of Need Short Appraisal Schedule (CANSAS): Met and unmet welfare and support needs[35];

(3) EQ-5D-5L Health Thermometer: Perceived health, social life, and work readiness statuses[36];

(4) The Kessler Psychological Distress Scale (K10): Agitation, fatigue and depression[37];

(5) UCLA 3-item Loneliness Scale: Feelings of being left out, isolation, and lacking companionship[38];

(6) Pain scale: Pain intensity[39].

The validated questionnaire data was collected by link workers at the program start and upon completion. Differences across time (changes in social and economic participation, wellbeing scores, and health service usage) were analysed using paired-samples t-tests and Wilcoxon

Table 2. Participant demographic and occupational characteristics (baseline)

Characteristic	Followed up		Lost to follow-up	
	%	*n*	%	*n*
Gender		174		23
Male	56.3		30.4	
Female	43.7		69.6	
Country of birth		135		14
Australia	62.2		35.7	
China	5.2		–	
Other (*n* other countries listed)	32.6	(25)	64.3	(8)
Language spoken at home		142		16
English	85.2		62.5	
Mandarin	3.5		–	
Korean	1.4		–	
Other (13 languages given)	9.9		37.5	
Indigenous identity		165		22
Aboriginal	4.8		–	
Torres Strait Islander (TSI)	1.2		–	
Neither Aboriginal nor TSI	95.7		100	
Current employment status		124		14
Full-time	4		14.3	
Part-time	8.9		–	
Unemployed	37.1		78.6	
Income support, not looking to work	50		7.1	
Worker's compensation	46		14.3	
Time in workforce		168		21
< 1 year	3		–	
1 to 3 years	5.4		4.7	
3 to 5 years	5.4		–	
5 to 10 years	9.5		14.3	
> 10 years	76.7		81	
Injury-related time off work		166		20
< 1 year	31.9		25	
1 to 2 years	30.7		20	
> 2 years	37.4		55	

signed-rank tests for non-parametric data; differences in hours on certificate of capacity by time off-work were analysed using one-way between-groups analysis of variance. Descriptive summary information of participant demographic, occupational, social, and health characteristics, and program appraisal was also collected. The NSW State Insurance Regulatory Authority provided participant claims data including capacity for work at three time points (analysed using one-way between-groups analysis of variance), and descriptive information including referral source, date of injury, changes in work status, and claim closure. Participant qualitative information was collected by link workers via questionnaire, interviews and activity reports, and thematically analysed according to the framework developed by Braun and Clarke (2006)[40], where repeating patterns of meaning were delineated into themes and illustrated using representative data extracts.

4 Results

Baseline data was collected for 200 Plus Social program participants; of these, 175 also had follow-up data recorded (12.5% were lost to follow up). Participants had a mean age of 51 years (SD = 10.15, n = 157, range 27 to 71 years old), other characteristics are provided in Table 2. The most frequently reported occupational categories were manual labour (24%); tradesperson (16%); and professional, technical, or managerial (10%). Referrals to the program were received from insurance scheme agents (29%), rehabilitation providers (26%), general practitioners (19%), self-referral (24%), and other sources (2%).

4.1 Capacity to work

Self-reported current ability to work in paid employment increased significantly by 15% from baseline (28%)

to follow-up (43%; Z = -4.60, $p < 0.001$). Confidence in being able to return to work in the future also increased significantly: with an 18% reduction in those who were not confident, and 6% increase in those who were (Z = -4.85, $p < 0.001$).

Data provided by the NSW State Insurance Regulatory Authority for 136 participants at three time points (Time 1: baseline, Time 2: 12 weeks after baseline/post-intervention; Time 3: 24 weeks after baseline/12 weeks post-intervention), showed that the mean number of medically-approved hours of work per week increased significantly over time (F (2, 198) = 63.25, $p < 0.001$, partial η^2 = 0.32). Pairwise comparisons indicated the mean difference was significantly higher at each later point in time (all $p < 0.001$), with a mean increase of 10.76 hours (SD = 13.95) between Time 1 and Time 3. Capacity for work (given as three categories: no, some, or full capacity) also significantly improved at each time point: between Time 1 and Time 3, 58% of participants had an increase in capacity, 4% had a decrease in capacity, and 38% had no change (Z = -6.98, p < 0.001). When grouped by time off work, more participants who had one to two years off work recorded an improvement in capacity to work (29%) than those who had more than two years off work (14%), however, there were similar proportions that had returned to work at full capacity in both groups (12% and 13% respectively).

Interviewed participants described how losing their ability to work had led to social isolation, loss of identity and purpose, diminished dignity, financial issues, relationship problems, unhealthy behaviours, increased anxiety and/or depression, and suicidal ideation. Those who were either not planning or not able to go back to work described barriers such as severity of injury, ongoing pain or mobility issues, older age, and generalised or specific fears. Some spoke about how they had lost hope in ever working again, but participating in the social prescribing program had helped to restore their sense of self-efficacy and self-worth despite any current incapacities. Others described successful experiences in returning to work or retraining.

"The loss of my job, financial stability and the meaning it provided me, led to feeling a loss of hope and dignity..."

"I had been working in the construction industry for over 20 years until I suffered a serious back injury in 2015. I stopped working immediately. Due to the increasing physical pain and decline in my function, my mental health was getting negatively affected. My mental state deteriorated to the extent of wanting to end my own life. Six months following my injury, I finally got access to help, including a psychologist whom I still work with to this day. The loss of my job and level of function led to feeling a loss of meaning and purpose. Nevertheless, I am trying to stay hopeful in climbing back up the ladder..."

4.2 Social inclusion

The number of people that participants could count on increased significantly from a baseline mean of 3.45 (SD = 4.17) to 4.19 at follow up (SD = 2.22; t(172) = -2.41, p = 0.017). Satisfaction with social support also increased significantly: 27% indicated some level of satisfaction at baseline which doubled to 60% at follow-up (Z = -8.09, $p < 0.001$). Thirty-nine percent of the cohort indicated that they never participated in social activities at baseline; this significantly decreased to 9% at follow-up (Z = -6.78, $p < 0.001$).

Nearly all of the participants who were interviewed identified that isolation had been a problem, with many linking this to their loss of work and/or to the effects of their injury including pain, impaired mobility, or increased symptoms of depression or anxiety. Many participants described the loss of trust and social connections in the workplace as decreasing personal confidence in engaging with people and in social activities generally, and described the social focus of the program as being instrumental in helping them to re-engage and build friendships and peer support networks.

"I got to observe effective group work aimed at recovery in action and the benefit it gave to others - not just myself. I watched other people learn that they weren't alone, to relax, enjoy, build confidence in their ability to make art and begin to open up to the people around them. It was a joy to be a part of that process."

"Social skills are a muscle that needs to be exercised. Experience with groups... it all helps build that muscle. I really needed a gentle introduction to this exercise and my link-worker was great at pulling me into the journey out of isolation."

4.3 Biopsychosocial wellbeing

All positive wellbeing indicators improved significantly from baseline to follow-up (WHOQoL, CANSAS Met Needs, EQ-5D-5L, K10, UCLA 3-item Loneliness Scale, Pain Scale), and all negative wellbeing indicators (CANSAS Unmet Needs, K10, UCLA 3-tem Loneliness Scale, Pain Scale) were significantly reduced (see Table 3). Wellbeing mean score improvements as a percentage from baseline mean score are presented in Table 4: the strongest improvements (as a proportion of the indicator scale) were in social life status, work-readiness status, and in the reduction of unmet needs.

Participants described many improvements to their mental health and their experiences of pain and/or dis-

Table 3. Mean wellbeing scores at baseline and follow-Up including within-group significance tests

Scale	Baseline	Follow-up	Paired-samples t-test		
	M(SD)	*M(SD)*	*t*	*df*	*p*
WHO-QOL-BREF (Quality of life)					
Overall Quality of Life *(1 item)*	2.48 (0.89)	3.17 (0.82)	-10.24	172	<0.001
Overall Health Satisfaction *(1 item)*	2.13 (0.89)	2.80 (0.88)	-10.01	172	<0.001
Physical Quality of Life	18.82 (2.79)	21.12 (2.85)	-11.38	172	<0.001
Psychological Quality of Life	16.42 (3.44)	18.67 (4.21)	-8.05	172	<0.001
Social Relationships Quality of Life	7.74 (2.46)	9.31 (2.25)	-9.59	172	<0.001
Environment Quality of Life	23.68 (5.05)	28.31 (5.30)	-12.26	172	<0.001
Total Quality of Life	62.23 (13.18)	76.29 (14.82)	-14.21	172	<0.001
CANSAS (Welfare needs and support)					
Met Needs	10.79 (4.96)	14.17 (5.37)	-7.54	174	<0.001
Unmet Needs	6.36 (3.53)	3.05 (3.33)	11.49	174	<0.001
Total Needs*	17.15 (4.59)	17.22 (4.55)	-0.16	174	0.873
EQ-5D-5L (Health-related quality of life)					
Health Status	41.43 (21.48)	52.65 (20.51)	-9.23	173	<0.001
Social Life Status	28.57 (22.44)	44.43 (23.26)	-9.07	173	<0.001
Work Readiness Status	25.85 (26.47)	38.09 (30.89)	-7.22	173	<0.001
K10 (Psychological distress)	33.19 (8.84)	26.77 (8.09)	12.87	172	<0.001
UCLA 3-item Loneliness Scale	6.99 (1.97)	5.82 (1.78)	8.89	169	<0.001
Pain Scale	5.63 (1.83)	4.77 (2.10)	5.47	172	<0.001

Note: * CANSAS Total Needs assists in interpreting changes in met and unmet needs, but is not a wellbeing indicator in itself

Table 4. Mean wellbeing score improvements from baseline to follow-up

Scale	Mean Change
WHO-QOL-BREF (Quality of life)	
Overall Quality of Life *(1 item)*	+28%
Overall Health Satisfaction *(1 item)*	+29%
Physical Quality of Life	+12%
Psychological Quality of Life	+14%
Social Relationships Quality of Life	+20%
Environment Quality of Life	+20%
CANSAS (Welfare needs and support)	
Met Needs	+31%
Unmet Needs	-48%
EQ-5D-5L (Health-related quality of life)	
Health Status	+27%
Social Life Status	+56%
Work Readiness Status	+47%
K10 (Psychological distress)	-20%
UCLA 3-item Loneliness Scale	-16%
Pain Scale	-15%

tress. For many, it was having link workers that understood their experiences and challenges, who could help them in overcoming negative thought patterns (such as hopelessness or anger) and develop more beneficial coping strategies. Some described how quality of life and mood improvements occurred by taking steps to acknowledge and address their difficulties with their link worker, and then making the effort to engage in more social and wellbeing activities. Emotional support was identified by many participants as the most substantial contributor to their improved quality of life.

"I am becoming more positive, optimistic, and calmer. I am stronger and capable of managing my pain and mental health issues… I do not see myself as an injured worker who is stuck, depressed, heavily medicated, and lost. I see myself with an injury that limits my mobility but not my myself."

"I was severely injured and spent 18 months in hospital and home. I felt very down and was sceptical when I first met with [my link worker]. [The program] helped me understand that the more my isolation and depression increased, my pain and hopelessness also increased. The program is a little like natural pain relief for your mind and body. I have developed a positive structure to my week, so much so that I now look forward to what each new week brings… My quality of life is a lot better, positive, happier… I am not negative anymore so my relationships have been working out."

4.4 Health service utilisation

Prior to their workplace injury, 9% of participants reported an existing disability and 18% reported having had received psychological treatment. Forty-eight people (28%) reported having spent time in hospital in the previous three months at baseline (M = 7.84 days, SD = 17.04) whereas only 19 (11%) reported hospitalisations at follow-up (M = 6.60 days, SD = 9.52); this was a signifi-

cant reduction (Z = -3.94, $p < 0.001$). The frequency of contact with health services also reduced significantly (Z = -6.69, $p < 0.001$), with the proportion of participants indicating frequencies of weekly or more dropping from 56% at baseline to 29% at follow-up. A number of interviewed participants spoke of physical and mental health improvements that were either attributable to the social prescribing program itself, or to the more suitable health service utilisation that their link worker helped organise.

"When the link worker first met me, I was unemployed, suffering every day from excruciating physical pain, isolated, poor sleep, and financially stressed. I am [now] connected to the right health services and have the right equipment [assistive technology for mobility] which has improved my life and health."

"Since being on the [social prescribing] program, I have not been to hospital and I have not had any anxiety attacks."

4.5 Program participation and satisfaction

Over 50% of participants received referrals to more than five services, with at least one social or other support link successfully made for all participants and half attending at least one Plus Social group activity (n = 178). Most participants described positive experiences with activities, including reduced social isolation, better ability to communicate and relate with others, increased confidence, and a stronger sense of belonging. There were some problems in program access, largely due to a lack of transport. Participants spoke highly of the support and expertise of the link workers, with many designating this as the most valuable component of the program:

"Link worker was genuine, compassionate, empathetic, kind, nurturing and provided heartfelt care... She had the systems knowledge around how things work and was able to help me with things like what I was entitled to through Centrelink, financial aid, and accessing my super. I was in good hands."

"Before I met my link worker I couldn't face each day. I didn't know how to carry on with day to day life because I was in so much pain and had severe depression and anxiety. I thought that my injury was a death sentence... When I would talk about my pain, whether physical or mental, my link worker would always remind me that things might not be going my way now, but that maybe tomorrow or in a week or a month they would be. My link worker helped me to change my mindset."

Program satisfaction ratings indicated that the majority of participants found the social prescribing approach to be effective in meeting their needs, encouraging meaningful activity, and improving general wellness and social connectedness (see Table 5). The most valued aspects of the program were: the link workers' high quality and effective support; participation in social and therapeutic activities that helped to reduce loneliness and increase positivity; and development of stronger understanding and skills in managing pain, distress, and psychosocial difficulties. Participants noted improvements to confidence, mental stability, social connections, ability to cope with pain and stress, quality of sleep, engaging in the community, and the appropriateness of services they were receiving. Areas that were described as not improving generally related to medical conditions and physical abilities. Where ability to work did not improve, reasons given were mostly related to pain, health and age issues, or workplace issues and/or legal processes.

In comparing the service received to the participant's expectations, 69% indicated that it was better or far better than they were expecting (see Table 5). Suggestions for improvement mostly focused on extending the program scope (including length of time, range of activities, accessibility [including transport], and frequency of link worker contact) and facilitating program access sooner after the workplace injury to limit deteriorations in wellbeing. Positive comments included *"I was amazed at how many great programs were available", "found it more nurturing than expected", "I have learned to trust people", and "I felt really supported".*

"One of the biggest issues for me was that I felt completely and utterly alone. Having the program and support gave me reassurance that there is an organisation and a group of people who are solely focussed on reconnecting people... Having a person who comes to you and makes the time to meet you in your space and environment; who spends the time to get to know you as a person including your situation, history, current circumstances and issues that come up; someone on your side who has the skills, training and understanding of the system, and has ability to give me the power to take steps, make decisions, or reach out to different organisations for assistance was very empowering."

5 Discussion

The social prescribing program was shown to be successful in its aims of promoting social and economic participation, increasing psychological wellbeing, and decreasing health service use for injured workers with psychosocial needs. The model of care was well-received, with the most highly-regarded aspect being the quality of the link worker's support in listening, understanding, and collaborating, to address practical and emotional needs. Participants spoke of benefits including greater empowerment and coping skills, as well as reduced loneliness and

Table 5. Program Satisfaction Indicator Ratings

Program satisfaction indicator	% per response category					Median response
	Not at all	Slightly	Somewhat	Moderately	Extremely	
Helpfulness of link worker	0.6	–	10.2	26.5	62.7	Extremely
Met individual needs	2.4	5.4	19.8	32.9	39.5	Moderately
Meaningful activities	2.4	2.4	18	30.5	46.7	Moderately
Support to actively direct goals	2.4	4.2	14.5	31.3	47.6	Moderately
Improved general wellness	4.2	5.4	24	29.3	37.1	Moderately
Improved social connectedness	5.4	6.6	26.3	32.3	29.3	Moderately
More confidence in work/community	13.8	7.8	31.7	23.4	23.4	Somewhat

greater ability to trust others, indicating that the approach is suited to addressing the intra- and inter-personal effects of having a work-acquired injury that limits or terminates one's capacity to work. In addition to enabling psychosocial adjustment to work capacity limitations, increases in work capacity measured over the program period demonstrate its suitability as a return-to-work intervention.

The program structure, delivery, and results were consistent with other social prescribing programs, where outcomes were associated with a range of psychosocial functioning improvements, including increasing health and wellbeing, self-management and reducing loneliness[22,25–34].

The intervention was unique in:

(1) Targeting injured workers;

(2) Aiming to increase rehabilitation treatment effectiveness, reduce time off work, and increase participant confidence in returning to work;

(3) Exploring participant experiences of grief and loss of dignity in becoming an unemployed, injured worker;

(4) Providing therapeutic and peer support opportunities to address these specific experiences.

Participants lost to follow up were more likely to not speak English at home, not be born in Australia, and were more likely to have been injured over two years prior to program commencement. This suggests that more consideration may be needed to better accommodate diverse population groups, and that a social prescribing approach may be better targeted to people who have more recent work injuries. Further information on participant structural difficulties, such as insufficient realisation of physical and social needs due to income, disability or other issues, may also provide greater insight into program outcomes and development opportunities. Comparing participant activity levels and frequency/nature of link worker engagement would produce further evidence of participant suitability and program efficacy. Continued and enhanced systematic data collection is required for longitudinal assessment of program impact, including the sustainability of benefits over time. Future evaluations could aim to identify the characteristics of injured workers who benefit most from the social prescribing model, as well as capture the experiences of link workers and others involved in providing rehabilitative support, to enable better understanding of the suitability and effectiveness of the model of care.

Expediting return-to-work is dependent on worker motivation and empowerment, the nature and severity of injury, and workplace characteristics including the employer's ability to adapt the tasks and environment to the needs of the injured worker, as well as protect against any further harm. Adapting the primarily health-focused model to meet the needs of injured workers requires further consideration of these processes and of the sufficiency and impact of occupational rehabilitation systems, as well as any limitations, delays, and stress that may be generated by these.

6 Strengths and limitations

This study has a number of features that address some of the shortcomings of other social prescribing program evaluations, namely in having pre-/post-intervention quantitative data and a large sample size (enabling meaningful analysis of changes over the program period), and in using validated tools for psychosocial assessment. The use of multiple data sources, including quantitative participant information from program and insurance regulator sources and qualitative accounts from link workers and program participants, assisted in comparing, verifying, and interpreting findings, including identifying subjective benefits and experiences of the program.

Limitations this study shares with other social prescribing evaluations include not having a control or other intervention group for comparison, and not having adequate post-intervention measures to evaluate maintenance of program benefits over time. Data collection by link workers may have contributed researcher or respondent biases such as social desirability. Data was not provided on the nature or severity of the participants' workplace injury

and any ensuing disability: this information would have enabled analysis of differences in program efficacy and suitability by injury characteristics, including level of health service need. Future outcome evaluations could be strengthened by controlling possible confounders such as condition, treatment, and time related health improvements or deterioration.

7 Conclusion

The social prescribing model of care, utilising holistic support and linking to services and social activities, was shown to be effective in improving overall wellbeing for injured workers with psychosocial difficulties. Benefits included increased social connectedness, confidence and ability to return to work, and reduced pain, distress, and health service needs. Interventions that promote workplace adaptation, and resilience in engaging with rehabilitation and restitution processes, may be constructive ways to further increase the efficacy and satisfaction of a social prescribing approach in reducing the psychosocial and structural difficulties experienced by injured workers.

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9 Conflict of interest

Christina Aggar, Theresa Caruana and Tamsin Thomas declare that they have no conflict of interest. Author J. R. Baker is the CEO of PCCS.

10 Ethical approval

Ethics approval was granted by Southern Cross University Human Research Ethics Committee (ECN-17-151). All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed consent was obtained from all patients for being included in the study.

11 Informed consent

Informed consent was obtained from all individual participants included in the study.

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