

# Therapeutic Nature: Nature-based social prescribing for diagnosed mental health conditions in the UK

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Common mental health conditions, such as depression, anxiety, and stress affect up to 15% of the population at any one time, and one in four people will experience a mental health problem at some point in their lives [1, 2]. Depression is the third most common reason for consultation in general practice in the UK and is the single greatest cause of workplace absenteeism. People suffering from poor mental health are at risk of dying 15-20 years earlier than people with good mental health [2]. The burden of poor mental health falls disproportionately on the most socio-economically deprived and marginalised groups. The costs of mental health problems to the economy are estimated to be approximately £105 billion every year [3].

Community focused approaches are enjoying a renaissance in public health. Having been pivotal to the 2017 Alma Ata Declaration on Primary Health Care (PHC) [1], there is renewed recognition that social and other non-medical factors strongly influence health. One key community-based approach is 'social prescribing'. Social prescribing consists of a process of linking individuals to social or community-based activities or resources which have the potential to improve health and wellbeing. Referral may come from primary care and other services, both public and 3<sup>rd</sup> sector, as well as direct self-referral. These pathways expand the options available to individuals who have complex social as well as clinical needs, by connecting people to community resources, information and social activities. In recent years there has been a significant expansion in the development and delivery of nature-based therapeutic interventions, through social prescribing, for mental health.

The aim of this project was to describe current provision and to clarify what works, for whom and under what existing processes, in the delivery of nature-based therapeutic programmes for diagnosed mental health conditions.

## Key findings

- **There is a significant amount of nature-based activities offered** by mental health and environmental NGOs, social enterprises, community interest companies (CICs), local councils, NHS trusts, and private therapists. However, there is wide variability of the nature and scope of these offers, within and between districts. Often projects are collaborative between multiple organizations. Referral bodies include primary care, mental health services, social care and educational institutions, people may also self-refer.
- Many social prescribing activities are **targeted at adults experiencing social isolation, loneliness and anxiety with complex needs**. While some nature-based social prescribing (NBSP) activities are designed as therapeutic, and others promote resilience, or provide enjoyable experiences, others are rather unspecific about which participants they are targeting. Some activities include therapeutic aspects such as formal counselling or therapy, other intervention components, such as skills learning or creative activities, may also be used.
- **Current capacity within the system is challenging to understand**. There is **poor coordination of demand and supply** at a national or local level.
- **Most NBSP offers are short term (~12 weeks)**, supported by project funding from bodies such as Big Lottery. There was some evidence of commissioned models, these tend to be pilots. There is a **reliance on 3<sup>rd</sup> party funders** whose goals sometimes align with national level priorities of the health system (e.g. the focus on better mental health) but not necessarily with local needs.
- There are **positive perceptions towards the NBSP activities offered through social prescribing** across the system, however this is not universal.
- **The mechanisms through which information is shared on individual NBSP specifics with the referral body is often patchy, ad hoc and, in some cases, insufficient to allow the link worker to make informed decisions about referrals**. Stakeholders struggle to maintain sufficient information. In the referral system this information deficit relates to the availability and specifics of NBSP activities, in the delivery system this information deficit relates to health and care system needs, engagement routes, and evidence standards.
- There is little robust quantitative research evidence for the effectiveness of nature-based social prescribing, however, we found some **evidence that nature-based activities can positively impact on depression, anxiety, mood and feelings of hope**. Higher quality qualitative evidence revealed how the activities are experienced and perceived to benefit.
- We identified a number of **key elements which need to be in place for NBSP to be effective**: coordination of NBSP within wider systems of health; where NBSP is additional and complementary to other services; if appropriate and informed referrals are made; where there is adequate information sharing between stakeholders; there is clarity in the aims and process of the NBSP; where NBSP activities are evidence based and theoretically driven; and provider organisations have adequate skills and capacity to design and deliver suitable NBSP offers.
- **Key recommendations** for further developing NBSP include: 1) advocacy for NBSP across systems; 2) identifying mechanisms to facilitate coordination of supply and demand in NBSP at a strategic level; 3) enhancing knowledge sharing, peer support and advocacy through a network and one-stop shop for nature-based social prescribing; 4) enhancing capacity of local coordinating bodies; 5) improving the funding system; 6) supporting the development of skills in nature-based social prescribing; 7) enhancing the usability of information on nature-based social prescribing; and 8) improving understanding of what works, how and for whom.

## Background

This briefing summarises the outcomes of a Defra funded review (project BE0155) which aimed to clarify what works, for whom and under what existing processes, in the delivery of nature-based therapeutic programmes for diagnosed mental health conditions. This briefing is aimed primarily at governmental (national and local) departments or bodies with responsibility for, or an interest in the development and use of NBSP. It may also be relevant to those organisations and individuals involved in the development and delivery of NBSP.

The project consisted of:

**Work Stream 1:** a detailed review and mapping exercise of the current provision of nature-based therapeutic interventions to support people with a mental illness in four areas of England: Devon, Newcastle, Bradford and West Yorkshire.

**Work Stream 2:** review of the current evidence base and update of existing reviews with the aim of understanding what works, for whom, in what circumstances.

**Work Stream 3:** gathering insights from service commissioners, mental health service professionals, primary health care services, environmental voluntary organisations, community-based providers and other intermediaries in the four locations.

**Work Stream 4:** bringing together insights from the mapping, evidence review and qualitative work using established methods of evidence synthesis and produce detailed conceptual frameworks, descriptive texts and illustrative case cases.

## Findings

### What is social prescribing and nature-based social prescribing?

Social prescribing consists of a process of linking individuals to social or community-based activities or resources which have the potential to improve health and wellbeing. Referral may come from primary care and other services, both public and 3<sup>rd</sup> sector, as well as direct self-referral. These pathways expand the options available to individuals who have complex social needs as well as medical, by connecting people to community resources, information and social activities, including activities based in or using nature. Social prescribing should be considered an umbrella term, under which a great variety of different approaches, new and pre-existing activities, and intentions have gathered.

### The extent and nature of nature-based social prescribing delivery

Gaining a reliable picture of the extent of NBSP across multiple areas is challenging. There is no registry or nationwide (or regional) coordinating body that collates such information. There is local action, such as the West of England LNP who are providing some coordination. The plurality of funders and delivery bodies further complicates efforts to gauge current levels of activity at different geographies. We found what appears to be wide variation in the amount and nature of delivery, both between areas and within them, with some appearing to have better provision, than others. Across our four areas, we found that:

- NBSP referral bodies include primary care, mental health services, social care, educational institutions, job centers and housing groups. People may also self-referral. NBSP providers are similarly broad and include (but are not limited to) mental health and environmental NGOs, social enterprises, community interest companies (CICs), local councils, NHS trusts, and private therapists. Often projects are collaborative between multiple organizations.
- Many social prescribing activities are targeted at adults experiencing social isolation, loneliness and anxiety with complex needs. Where NBSP target mental health conditions, these tend to be depression, anxiety and other common MH conditions. Some programmes are non-specific in the terms of the mental health conditions they related to, if they do so at all.
- Some NBSP are designed as therapeutic, others to promote resilience, while others are to provide enjoyable experiences for people with such mental health conditions. Some NBSP include therapeutic aspects such as formal counselling or therapy, other intervention components, such as skills learning or creative activities, may also be used.
- Some NBSP providers offered projects that were specifically targeted at mental ill health, however, other providers preferred not to be explicit that their offer was about improving mental ill health and did not highlight it during the activities.
- Whilst it is not always clear, it isn't universal for environment-focused NGOs to formally include mental health professionals within project structures and vice-versa. Many NBSP programmes are not informed by professional mental health practice.
- The natural environment could be used instrumentally within the programmes or it could be a setting or context for therapeutic or creative activities.
- Most NBSP are short term (~12 weeks), supported by project funding from bodies such as Big Lottery, Heritage Lottery Find, or People's Postcode Lottery. There was some evidence of commissioned models, these tend to be pilots.

## How well is the nature-based social prescribing system working?

### Is NBSP recognised as a legitimate offer?

The attitudes of GPs we interviewed towards to social prescribing were generally positive; social prescribing, and specifically NBSP activities, were considered to *contribute* to achieving better mental health but are not considered a panacea. We were told that positive attitudes are not universal and some GPs do not see the value of social prescribing or NBSP, do not think it's the right approach to address complex health, social and/or material challenges and do not want to refer their patients.

Like all social prescribing offers, there is some evidence that the public do not consider it to be a legitimate medical referral. This may be especially the case in the context of chronic underfunding of mental health services, with a non-medical referral perceived to be a 'cop-out' and failure to provide more accepted treatment options. This is likely to affect both uptake of referral but also the effectiveness of the programme itself.

### What is the demand for nature-based social prescribing?

There appears to be significant demand for nature-based activities offered through social prescribing systems. A number of large-scale funders have supported nature-based activities, 3<sup>rd</sup> sector organisations have made explicit reference to integrating NBSP into their core activities, and we heard that link workers

are keen to refer people to nature-based social prescribing. Many (but not all) of the NBSP providers we spoke to reported that there is clear demand for nature-based social prescribing from both patients and referral bodies. However, interest at the referral body and link worker level is patchy and differs between areas. The level of demand appears to pose challenges at multiple points in the social prescribing system, particularly for delivery organisations.

#### What is the capacity within the NBSP system?

Due to the lack of coordination, fragmented funding system, and challenges of communicating with the diffuse system we were unable to gain a complete understanding of the capacity of the NBSP system across the four areas. Whilst there appears to be considerable capacity in the system at any one time, we saw that challenges such as short-term funding affect long term capacity building. Many of the NBSP providers were small organisations with limited capacity for delivery.

#### Coordination of supply and demand

We found that currently there does not appear to be a process through which demand (e.g. for services relating to particular mental health need) can be matched to supply (e.g. relevant NBSP offers). We found that there is only local, *ad hoc*, coordination of demand and supply in the social prescribing system as a whole and for nature-based social prescribing specifically. In particular we found little evidence of coordination of demand and supply in social prescribing via the funding system at a very high level (e.g. that there was an apparent demand for the provision of nature-based activities that were intended to promote better health including mental health, in particular populations to which funders responded). We found some evidence of coordination at a local area level, for example through the West of England Nature Partnership, however in other areas there appears to be little capacity for coordination. The reliance on 3<sup>rd</sup> party funders with potentially different goals to the health system is a key challenge for the coordination of demand and supply in social prescribing, including nature-based social prescribing. There is some evidence at a (very) local level of interaction between, for example, Clinical Commissioning Groups and NBSP delivery bodies to provide commissioned services for particular needs, including through small grants. However, in general the process is disjointed and *ad hoc*, in some cases relying on the perceptions of need from third party funders to drive supply.

#### Leadership

At a national level the government, through DHSC and Defra (and their agencies and public bodies), have provided support for social prescribing and NBSP respectively. At a regional level the NHS through CCGs and Local Authorities through Health and Wellbeing Boards and other bodies have supported social prescribing and nature-based social prescribing. From the NGO sector a variety of environmental and health NGOs have been vocal in their support for NBSP and have integrated the practice into their strategy. In some local areas there is leadership developing (for example in the West of England Nature Partnership) but as of yet there is no single point of contact at a high level to coordinate activity.

#### Information availability and sharing

The mechanisms through which information is shared on individual NBSP specifics with the referral body is often patchy, *ad hoc* and in some cases may be insufficient to allow the link worker to make informed decisions about referrals. We found that referral pathways were often not made obvious on project websites or materials and the articulation of the specifics of the NBSP was very variable. There is currently no standardised way to describe the activity which includes information such as any active therapeutic elements, who it is suitable for, and intended outcomes. Without this information the link worker is making

referrals without adequate information as to whether the activity is suitable. This may potentially result in inappropriate referrals. We also did not hear about any formal process or system for information sharing on the outcomes of nature-based social prescribing.

Health professionals and link workers struggle to access and maintain knowledge of what NBSP is available in their area. The NBSP providers reported struggling to identify who to communicate with. These challenges can be compounded by 'not speaking the same language', lines of communication that are poorly developed, and by the plurality of different referral services within areas.

## **The experiences of the nature-based social prescribing delivery bodies**

### Navigating the health and social prescribing system

Navigating the health system for non-health organisations and those delivering NBSP is complex – often the systems are opaque, language difficult and entry points unclear. Further challenges arose for NBSP providers working across different health areas. Often different systems are in place with different points of contact and expectations.

### Establishing and delivering NBSP

We found that small scale NBSP providers struggle to gain a foothold in the social prescribing system. In addition to challenges of navigating the system, funding, and the poor coordination of what is needed in terms of delivery, we heard that some providers 'slip under the radar' and fail to gain referrals.

### Availability of resources

All of the community providers reported that they had adequate access to the natural environment and these included a diverse range of green spaces from public parks, allotments, farms, forest/woodlands and community gardens.

Social prescribing is a system, the success of which is dependent on wider infrastructure and on the resources of the participants themselves. In some areas the setting for NBSP was remote from the communities they were serving, necessitating the provision of mini-buses as public transport was insufficient. We also heard that some NBSP providers had had to purchase protective outdoor clothing as referees had no suitable shoes or clothing.

## **The funding system**

There is a variety of different funding processes used to support nature-based social prescribing, these include project funding from bodies such as the Lottery funds, charitable funders, corporate funds (e.g. SITA) and some direct commissioning. Often funding is considered to be piloting and is not designed to be sustained with commissioned activities in the longer term.

A key challenge for social prescribing, including nature-based social prescribing, is the reliance on 3<sup>rd</sup> party funders whose goals loosely align with national level priorities of the health system (e.g. the focus on better mental health) but not necessarily with local needs. This potentially creates disconnects between the needs of the health systems and the NBSP provided. Commissioned, results oriented models are hampered by a lack of understanding of what NBSP is 'for', what the outcomes are likely to be, and in what time frame any

outcomes might manifest. The current model of funding also leads to short termism, has a focus on innovation, and allows for few opportunities to build capacity and scale up good practice. The repetitive and competitive project-based funding model is a considerable burden on NBSP providers.

The majority of health system funds for social prescribing are to provide link workers, very little is used to support delivery. There is some evidence that some health system delivery funders, including local commissioners, may not perceive of NBSP as core. On the other hand, there is anecdotal evidence that those funders that were receptive have begun to suggest that it is not sufficiently novel.

## Skills and roles in social prescribing

We found varied levels of formal training in delivery of programmes and support for mental health issues. Some of the training was nature-based, while other training mentioned related to counselling or Mental Health First Aid Training. Some of the NBSP providers were related professionals – teachers, occupational therapists or psychotherapists – with many years of experience of working with specific groups of people. However, in terms of mental health expertise, some were keen to point out that their expertise did not extend to dealing with severe mental health issues. We found that, whilst it is not always clear, it isn't universal for environment-focused NGOs to formally include mental health professionals within project structures and vice-versa.

## State of current evidence, availability and use

### The utility and effectiveness of nature-based social prescribing

Despite a large amount of research effort in this area (we identified 37 quantitative and 30 qualitative studies) we found little robust quantitative evidence of effectiveness of nature-based interventions, with few high quality, reliable RCTs available. There is some evidence that nature-based activities can positively impact on depression, anxiety, mood and feelings of hope. The evidence base is further limited by the plurality of different nature-based interventions and population groups who have taken part. Further, participants reach the programmes through a variety of different routes, factors we considered to be active in whether or not positive outcomes are achieved. Finally, there is a lack of evidence on whether some referees do not, or cannot take up offers of nature-based interventions through a social prescribing system or on those who drop out of the system at any point.

The qualitative evidence synthesis showed broad and wide-reaching perceived impacts from participants, including: increased knowledge and a sense of achievement with what they were doing, enjoying being physically active, and even tired out by taking part. The groups were considered important, generating a sense of belonging. Nature itself provided quietness and calm, away from the usual day-to-day living environments. Participants also found solace in nature as a “patient receiver” of their needs and symbolically in the rhythms of growth and renewal.

### The implications of the state of the evidence base

A relatively limited understanding of the array of “active ingredients” of nature-based social prescribing is preventing the further development of effective practice and prevents meaningful comparison with other treatment or delivery options and a full understanding of the value of environmental spaces used for nature-

based social prescribing. In the absence of more comprehensive programmes of NBSP research, wider bodies of evidence relating to active ingredients of successful health promotion programmes - such as positive group experiences, increased physical activity, and promoting a sense of achievement - could be used to refine activity specifics.

The current evidence base doesn't yet evaluate the whole NBSP pathway – we only know about the impact on people who make it to the intervention – more work is needed to understand how to match the right people to NBSP and to support those with specific needs which influence their engagement.

## **What is effective nature-based social prescribing practice?**

Social prescribing and NBSP are complex interventions operating within a complex system, made up of arrays of interconnected and interdependent actors, processes and events, each element may have an effect on a) a successful process of referral and b) on mental health. We identified key factors likely to contribute to effective NBSP processes and outcomes (all of which we try to represent in the model at end of document):

- Coordination of social prescribing and NBSP within wider systems of health, care and social provision; where funding or commissioning meets wider system needs; NBSP is additional and complementary to other services; and NBSP helps reduce and address wider system pressures.
- Positive and receptive context, institutionally and societally, with a supportive and functional health, care and social context and patient recognition of the option.
- Appropriate referral from GP to LW and onwards to nature-based social prescribing, with the referee supported throughout the process.
- Clarity in aim and process of the nature-based social prescribing, of the beneficiary groups, and of ways in which they may benefit and how, with adequate information sharing between stakeholders.
- NBSP activities are evidence based and theoretically driven, with a clear understanding and integration of active elements, risks anticipated and mitigated, and robust and resilient to sporadic uptake and potentially flexible delivery.
- Programmes may incorporate therapeutic elements such as CBT, talking therapies, resilience building elements, skills development, development of self-efficacy and self-awareness.
- Provider organisations have adequate skills and capacity to design and deliver a suitable NBSP offer.
- Process of improving NBSP activity informed by suitable monitoring and evaluation. Demonstration of value for money of NBSP through suitable methodologies such as cost-effectiveness analysis or cost-benefit analysis allowing comparison to other uses of public funding.
- Flexible and sustainable funding options for NBSP activities.
- Adequate and functioning wider infrastructure enabling access to nature-based social prescribing.

We identified the following key factors which are likely to contribute to failure in NBSP processes and outcomes:

- Dysfunctional demand and supply system leads to over/under supply of specific offers. Funding is inadequate, short term, insufficient, difficult to access and NBSP providers exploited.
- Social prescribing and NBSP not recognised as legitimate offer by stakeholders.
- Social prescribing adds to service burden, disrupts and/or duplicates provision or existing systems.

- Dysfunctional communication between referral bodies and NBSP providers, inadequate information on NBSP available in area, poor information on activity to inform referral.
- Poorly designed nature-based social prescribing, risks not anticipated or mitigated.
- Unanticipated users, delivery organisations lack capacity to deliver, short term offer, low flexibility for activity entry, cliff edge end of provision, provision is under-utilised or sporadic uptake.

NBSP is not without risk – to the participants and the delivery bodies, as well as in terms of poor value for money and societally. Understanding and acting on potential risks is crucial. Potential risks include:

- Harm to the individual going through the NBSP process, including alienation from the health system to injury or other risk to health (e.g. zoonotic disease) resulting from taking part in activity. Inappropriate NBSP activity components, or group dynamics exacerbates or worsens mental health conditions
- Increased burden on the health, social or care system, disruption of existing effective systems of care provision, reducing provision for other categories of service users
- Increased burden on particular natural environments, damage to sites, increased crowding, exclusion of users
- Pressure on NBSP providers affects provider's mental health. Poorly equipped and little support systems to help them deal with what they are exposed to
- Exacerbates inequalities in health through unequal provision, availability of resources (e.g. sites), processes of uptake and adherence.

## **Illustrating success and failure points in the nature based social prescribing system**

The results of the project were used to develop two logic models. The first model illustrates success factors in NBSP for mental health and the factors which contribute to successful processes and outcomes. The second model illustrates failure points in the nature based social prescribing for mental health system.

The four pathways used to structure each model are:

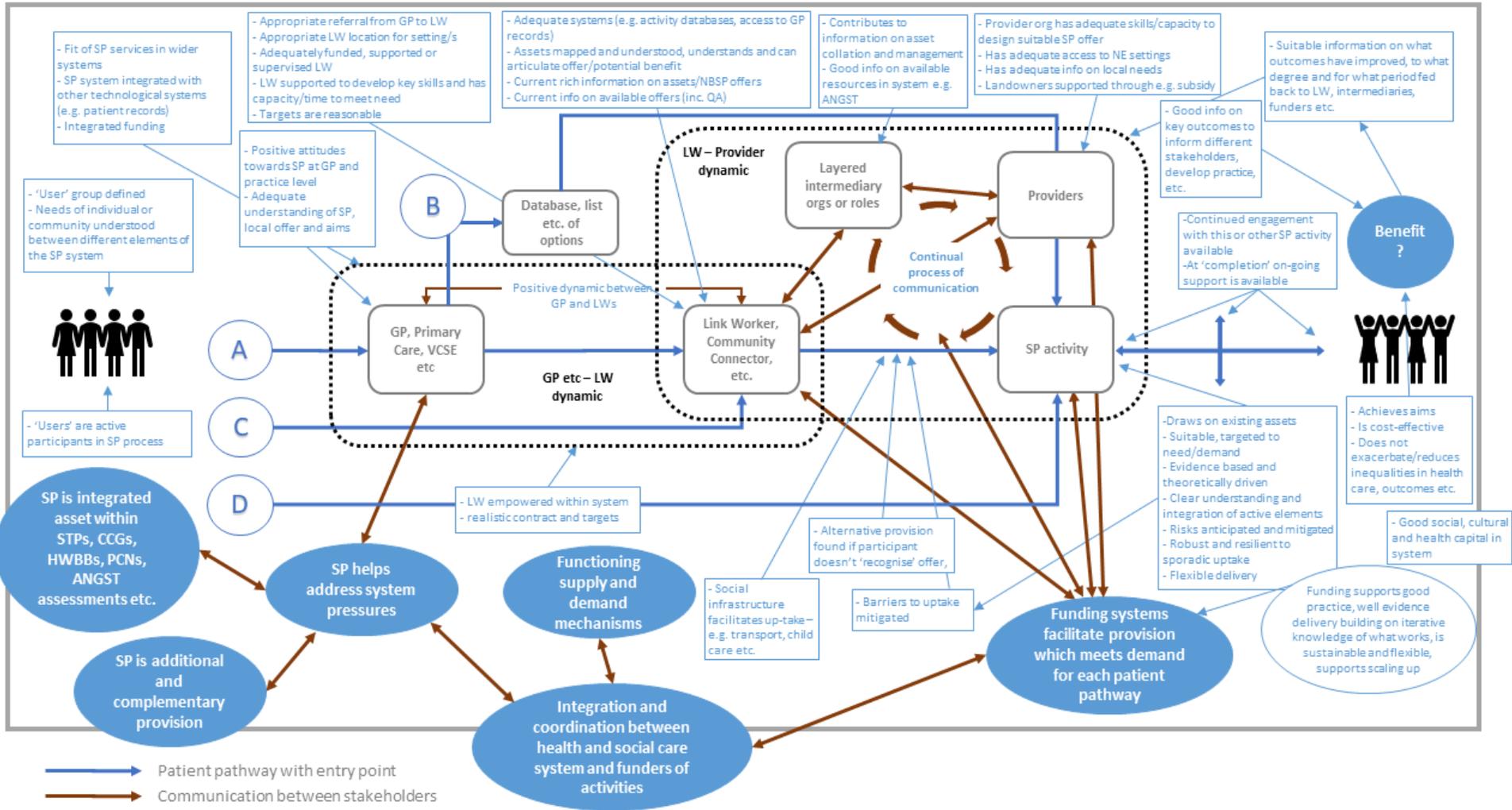
*Pathway A:* Primary care or another service, usually public or 3<sup>rd</sup> sector refers an individual to a link worker, or similar role. The link worker works with the individual to identify a suitable community-based resource. The individual receives a referral to the community resource.

*Pathway B:* Primary care or another service, usually public or 3<sup>rd</sup> sector, refers an individual to a directory of social prescribing opportunities available. The individual, potentially supported by the health professional, accesses a suitable community-based resource. The individual receives a referral to the community resource.

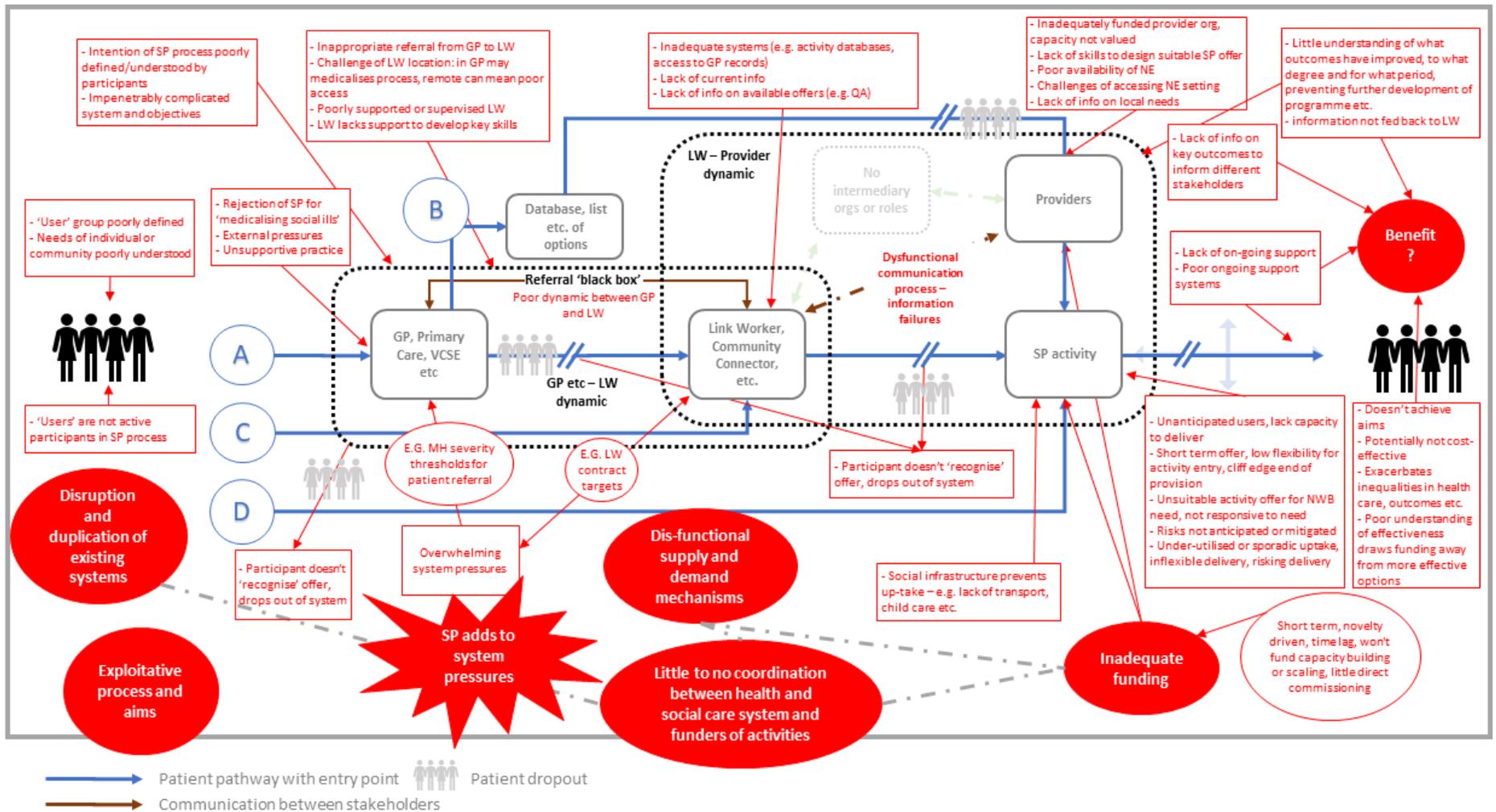
*Pathway C:* The individual accesses the social prescribing system through direct contact with a link worker or similar role, bypassing the health or other professional referral. The link worker works with the individual to identify a suitable community-based resource. The individual receives a referral to the community resource.

*Pathway D:* The individual accesses the community-based resource directly with no direct referral through the health system or via a link worker or similar role.

### The logic model of (success factors in) nature based social prescribing for mental health system



### The dys-logic model of (failures in) nature based social prescribing for mental health system



## Conclusions

There is a clear interest and enthusiasm in referring people experiencing social isolation, loneliness, anxiety or other mental health difficulties to nature-based activities through social prescribing. There is a wide variety of nature-based activity funded and offered across England. There is some, limited, evidence that activities in nature are beneficial to mental health as well as indications of effective practice and active ingredients of programmes. However, despite this positive context, we identified a number of challenges in the system, including: poor coordination of demand and supply; inadequate funding for delivery and activities; poor information sharing between stakeholders; and a need for integration of evidence-based practice into the design and delivery of nature-based offers. We identified eight key needs:

- Recommendation 1: Advocacy for NBSP across systems
- Recommendation 2: Identifying mechanisms to facilitate coordination of supply and demand in NBSP at a strategic level
- Recommendation 3: Enhance knowledge sharing, peer support and advocacy through a network and one-stop shop for nature-based social prescribing
- Recommendation 4: Enhance capacity of local coordinating bodies
- Recommendation 5: Improve the funding system
- Recommendation 6: Support the development of skills in NBSP
- Recommendation 7: Enhance the usability of information on NBSP
- Recommendation 8: Improve understanding of what works, how and for whom

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## References

1. Department of Health, *A Framework for mental health research*. 2017, HMSO: London.
2. Mental Health Taskforce, *The Five Year Forward View for Mental Health*. 2016, NHS England: London.
3. Department of Health, *No health without mental health: A cross-government mental health outcomes strategy for people of all ages*. Supporting document—the economic case for improving efficiency and quality in mental health, 2011.

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## About the project

The work was undertaken 2019-2020 and was guided by Defra, Natural England, NHS England and Public Health England. The review focuses on evidence and practice relating to the UK context but does incorporate evidence relating to elsewhere in the world where relevant. Ethical approval was obtained from the University of Exeter Medical School Research Ethics Committee (Jul19/D/217) and from the NHS Health Research Authority (IRAS Project ID – 270471).

This Research Briefing and the full report *Therapeutic Nature: Nature-based social prescribing for diagnosed mental health conditions in the UK* are published by Defra (Defra Project Code BE0155) and are available from the Department's Science and Research Projects Database at <http://randd.defra.gov.uk>. Whilst the research was commissioned and funded by Defra, the views expressed reflect the research findings and the authors' interpretation; they do not necessarily reflect Defra policy.