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Collaborative methods to co-produce a social prescribing logic model

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Abstract

Background Logic models are useful tools for evaluating complex interventions, but methods for collaboratively developing them with key stakeholders are rarely reported. We describe innovative methods used to co-produce a logic model for *Creative Minds*, an NHS-based charity supporting community creative activities for mental health service users.

Methods We held three online consensus meetings with 18 stakeholders including *Creative Minds* staff and community partners. An initial logic model draft was iteratively refined through real-time collaborative editing during meetings. Additional feedback was gathered via a conference poster. Researchers reviewed and synthesised inputs after each stage.

Results Stakeholders readily engaged with the process, expanding and refining the initial logic model in real time through live amendments. Key challenges included capturing mechanisms/linkages and managing differing stakeholder perspectives. The resulting logic model provides a comprehensive representation of the *Creative Minds* approach ready for field testing.

Conclusions Our collaborative online approach enabled meaningful stakeholder involvement in the development of a complex intervention logic model. This contributes to expanding methodologies for co-producing logic models and evaluating social prescribing interventions. Further research is needed to refine methods for capturing causal mechanisms in logic model co-production. The co-produced logic model will support the implementation and evaluation of creative approaches in NHS mental health services.

Plain Language Summary

Creative Minds is a charity based in an NHS mental health trust that aims to support people using the trust service with community based creative and sporting activities that are suitable and welcoming. In this paper, we discuss how we worked with a group of people to better understand how *Creative Minds* is meant to work. We did this using a logic model. A logic model is a picture or visual plan that usually describes the resources needed, the activities that take place and the changes people hope the programme will bring about. We held three online meetings with 18 people, including staff from Creative Minds and the people who organised and run the community activities. We started with a rough draft of the model and worked together to make it better during the meetings.

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We also received more feedback from a poster at a conference. After each step, we reviewed everyone's ideas and updated the model. The group made many improvements, adding new ideas and showing how different parts of the logic model fit together. Some of these suggestions were simple, while others were more complicated, and it was not always easy to explain everything. Where people did not agree group processes allowed these perspectives to be explored and resolved. By the end, we had a detailed model of how Creative Minds works, which we can use to test how Creative Minds runs in real life.

Keywords Logic model · Coproduction · Social prescribing · Mental health · Arts in health

Abbreviations

CM	Creative Minds
LEAP	Lived Experience Advisory Panel
LM	Logic model
NHS	National Health Service
SP	Social prescribing
VCSE	Voluntary Community and Social Enterprise

Introduction

This paper describes the methods used to co-produce a pragmatic logic model for a complex social prescribing intervention. This logic model was developed as the first step towards evaluation of an intervention that aims to build pathways and bridges between a secondary care mental health trust and supportive creative local community groups and providers.

Logic models

Logic models (LMs) are schematic visual representations of programme theories. Both programme theories and LMs aim to describe the processes that take place in relation to a given intervention [1] and are usually informed by a combination of research evidence, theoretical literature and personal lived experience.

Few research papers focus explicitly on the methods used to co-produce LMs with stakeholders. A scoping search of titles that include "logic model" AND "co-production" identified only one conference presentation [2] which describes how co-production underpinned the development and testing of a LM to inform novel synthesis methods. The authors prioritised genuine co-production and worked closely with an Advisory Group which included people with lived experience expertise. They held a series of workshops that brought key stakeholders together to co-produce the LM. They found that co-production was a powerful way to develop LMs because it prioritises insights of stakeholders over availability of organisational data and ensures that the focus remains on issues that are important to the associated communities. They recommended that future researchers should consider using interactive technology, such as online whiteboards to visualise ideas and work on projects with a team, allowing for faster feedback and iterative development.

Social prescribing

Social prescribing (SP) is a non-medical intervention designed to support and improve the quality of life of people with long-term mental and physical health conditions and other complex social needs. In England, it forms part of the NHS Long Term Plan [3], with advocates claiming that SP can improve people's health and wellbeing and reduce pressure on healthcare professionals [4].

Despite high-level commitments and investments, consensus on what constitutes "successful" SP is lacking [5] and evaluations of SP programmes have proved challenging [6]. Realist evaluations may help in understanding how, why, for whom and in what contexts SP interventions deliver successful outcomes [7]. Realist evaluations typically begin with the development of programme theories and LMs based on stakeholder consultations and reviews of key documentation [6].

Social prescribing and NHS secondary mental health care

Much research into SP has focused on link-worker interventions in primary care settings and their associated impact. However, some secondary mental health settings use SP to support service users to engage in community initiatives that can offer holistic, individualised care and improved quality of life and wellbeing (for example, [8]). The NHS Community Mental Health Framework highlights the importance of services that support people to participate in their communities [9] and SP is seen as having the potential to deliver this goal. A review of international community-based social interventions found that they offer considerable benefits for people with severe mental health problems, but that such interventions need to be underpinned by multilevel stakeholder commitment [10].

The Creative Minds' approach

South West Yorkshire Partnership NHS Foundation Trust provides community, mental health, forensic and learning disability services to the local region. Embedded within the Trust is a charity called *Creative Minds* (CM) which supports community-based activities appropriate for people with moderate to severe mental health needs, learning disability, dementia, attention deficit hyperactivity disorder and autism spectrum disorder. Building on increasing evidence about the potential contribution of arts and creativity to the prevention of mental illness and support for mental wellbeing [11], CM helps to develop, co-fund, support and create pathways to local partner organisations that deliver bespoke community-based projects and groups such as choirs, arts cafes, gardening groups and football leagues. CM's aim to empower individuals and communities "requires a fundamental shift in power to people with lived experience and communities recognizing them as equals in a relationship that creates value through meaning and hope." [12]. To achieve this goal CM supports and develops peer-led activities which are representative of such a shift in power.

The CM approach has been developed with local stakeholders to meet local needs and is recognised as an innovative and compassionate approach that offers genuine opportunities to support mental health recovery [13]. Interest has focused on widening implementation of the CM approach to other NHS secondary Mental Health Trusts. A clear description of the CM approach and its context, mechanisms and desired or hypothesised outcomes is needed to facilitate further spread. It is also important, given the nuanced and community focus of the CM intervention, to use strongly co-produced and collaborative methods.

Rationale for current study

Methods for the meaningful co-production of logic models are rarely described in detail. Existing accounts often emphasise the value of stakeholder involvement or present the completed model but provide limited insight into the practical and interpretive work involved in developing the model collaboratively. In particular, there is little guidance on how stakeholders can be supported to review and refine an initial draft, how tacit and experiential knowledge can be elicited, how overlapping or competing contributions can be managed, and how diverse stakeholder input can be translated into a usable evaluation tool. This represents an important methodological gap for complex, relational interventions such as social prescribing, where programme theory may be distributed across multiple organisations, professional groups and community partners. This paper addresses that gap by describing

the collaborative methods used to develop and refine a pragmatic logic model for the Creative Minds approach as the first step towards future evaluation.

Methods

An innovative and collaborative approach was taken to co-produce a LM that placed particular value on stakeholder experience and tacit knowledge. The methods used involved interactive stages of development with specific stakeholder groups. An initial iteration of the LM was informed by a review of academic publications and grey literature and discussions with CM leaders. Subsequently, three successive online consensus meetings were convened with a selection of key stakeholders with each attending a single meeting. Participants were helped to understand the function of the LM as a visual representation of the CM programme theory and, following a brief introduction, collaborated to iteratively refine the LM. Content of the model was presented under column headings of the context, pull or need for the intervention, the resources needed, the activities undertaken, the outputs and the desired or hypothesised outcomes and impacts.

Recruitment

CM staff were asked to identify key stakeholders, who were invited to participate in an online consensus meeting lasting a maximum of 90 min. Invitees included CM staff, NHS staff, community activity providers and members of the CM "collectives" (local committees involved in local decision-making). Recruitment was intentionally inclusive, with the aim of offering a place to all individuals who expressed an interest in participating. Given the time pressures experienced by many of the stakeholder groups and the anticipated challenges associated with attendance, multiple meetings were offered to maximise opportunities for participation. The number of consensus meetings that took place ultimately reflected the level of interest and participants' availability. Two meetings were initially scheduled, with an additional supplementary meeting for individuals who were unable to attend the larger sessions. This flexible approach was intended to facilitate participation and ensure that a broad range of perspectives would be represented.

In addition, an iteration of the LM was displayed as a poster at the CM conference. Conference attendees with a connection to CM were invited to provide feedback either by adding written comments using post-it notes or through discussion with members of the research team. This provided an alternative, less time-intensive means of engagement for those who may not have been able or willing to participate in a formal consensus meeting and was intended to broaden the range of perspectives informing the development of the LM.

Consensus meetings with live amendments

The format of the consensus meetings was co-produced with a Lived Experience Advisory Panel (LEAP) to ensure that the language and explanations used were clear and fit for purpose.

At the start of each consensus meeting, participants were told that the purpose of the session was to explore how accurately the LM represented the active ingredients of the CM approach, as they experienced them in real life. A researcher then introduced the purpose and structure of logic models (LM), drawing on publicly available guidance for evaluating health and wellbeing interventions [14]. As most participants were unfamiliar with LMs, a home-baking analogy was used to help participants distinguish between the LM components. The context, pull or need might be to provide a celebratory treat; resources would include the ingredients, equipment and person doing the baking; and activities would include weighing, mixing and baking. The output would be the finished cake, while outcomes might include making people feel happy, valued or celebrated. Longer-term impacts could include reduced hunger and stronger social connections.

Participants were then shown a draft LM developed from Creative Minds (CM) staff contributions and publicly available information. The draft was presented in PowerPoint, with one slide for each LM component: context, resources, activities, outputs, outcomes and impact. Each slide included the proposed content alongside a prompt question to guide discussion. Participants were asked to review, challenge and refine the content in every column. The prompt questions used to structure these discussions are shown in Table 1.

The research team considered the use of online whiteboards, as suggested by O's-Eves et al. [2]. However, concerns that compatibility issues and technical complexities might deter collaborators led to trialling "human-mediated" real time iterative development, involving a member of the research team making "live" amendments to the LM. A third researcher took notes during meeting discussions to ensure nothing was missed in the live editing.

During the first consensus meeting, additions and amendments were entered directly into the live LM document. This allowed participants to check, in real time, whether the researchers had accurately understood the tacit knowledge shared during the discussion and had recorded it transparently. Following the meeting, the research team reviewed the draft LM to identify any repetition, assess whether newly added items had been placed in the most appropriate columns and to refine where necessary. The researcher notes were also checked and any missing and unique items added into the LM.

The revised LM was then presented to a second group of stakeholders. They were invited to review and critique the existing content, refine previous additions and contribute new information. Additions made at each stage were distinguished using colour coding and different fonts, allowing the development of the LM to be traced over time. For example, "personalised care," used in the first version of the context section, was later changed to "person-centred care" and italicised to record the amendment.

After feedback from the second consensus meeting had been incorporated, checked and researcher notes cross-referenced, the revised LM was presented at a conference hosted by CM for service users and providers. Conference feedback was added before the LM was taken to a third and final consensus meeting, where participants again reviewed, critiqued and refined the existing content and added further information. Once all consultation stages were complete, the research team conducted a final review to remove duplication, confirm that additions had been assigned to the most appropriate columns and improve clarity and concision while retaining all substantive contributions and feedback. The chronology of data collection and analysis is presented in Fig. 1.

Co-production roles and decision-making in co-production

The LEAP helped shape the consensus meeting format and the language used in the meetings to ensure inclusivity of language and the creation of a safe space for participants. The researchers developed the first iteration of the LM based on discussions with CM staff and publicly available descriptions; they also selected the column-based structure of the LM. It should be noted that although using an initial draft and fixed column structure made the task accessible, it also channelled contributions into a conventional LM structure and was researcher-led.

Stakeholders in the consensus meetings had the opportunity to challenge wording and placement and suggest amendments in real time. Afterwards, the researchers checked for duplicated or misplaced items. Any unresolved

Table 1 Prompt questions for the logic model (LM)

LM column	Prompt question
Context	Why do we need an organisation such as Creative Minds?
Resources	What things or people are needed to run creative minds effectively?
Activities	What are the processes and actions that Deliver results?
Outputs	What are the direct products of Creative Minds' activities?
Outcomes	What are the hypothesised changes in knowledge, skills, behaviour, condition or status?
Impact	What are the intended longer-term impacts on individuals and community?

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Fig. 1 The chronology of data collection and analysis

decisions were discussed by the research team. The final model is now ready for the next stage of the research, which is "field testing" the logic model with service users, providers and NHS staff for validation and further elucidation of context and mechanisms.

Results

Nine participants attended the first on-line consensus meeting; six attended the second meeting; and three attended the final meeting. Of the 18 participants, 3 were employed directly by CM and 15 were CM partners (that is, providers of community-based sports and creative activities and groups). Additional comments and feedback were given by three attendees at the CM conference.

Data, in the form of suggestions, additions and feedback from the consensus exercises and conference poster were recorded and reviewed by the researcher team for integration within further iterations of the LM. Tasks at this stage involved checking for duplications and misplacements, and understanding the relationships, connections and causal linkages between columns.

Duplications and queries about placements

Clarifying suggestions, feedback and additions to LM from stakeholders attending the consensus meeting was a two-stage process. First, during the consensus meetings, a researcher actioned the suggestions, feedback and additions in real-time, asking clarifying questions to ensure accuracy of wording and placement. Second, new additions and edits were reviewed after each meeting by the research team to identify duplicated ideas or perceived misplaced elements within the LM.

Discussions during and after the consensus meeting led to an iterative process of tidying and refinement of an exponentially burgeoning LM. When two or more statements appeared to relate to the same idea or phenomenon, they were combined into a single unifying statement. For example, five statements from the context column related to the type of care needed in NHS and community settings, and these were combined following review into a single representative statement (Fig. 2).

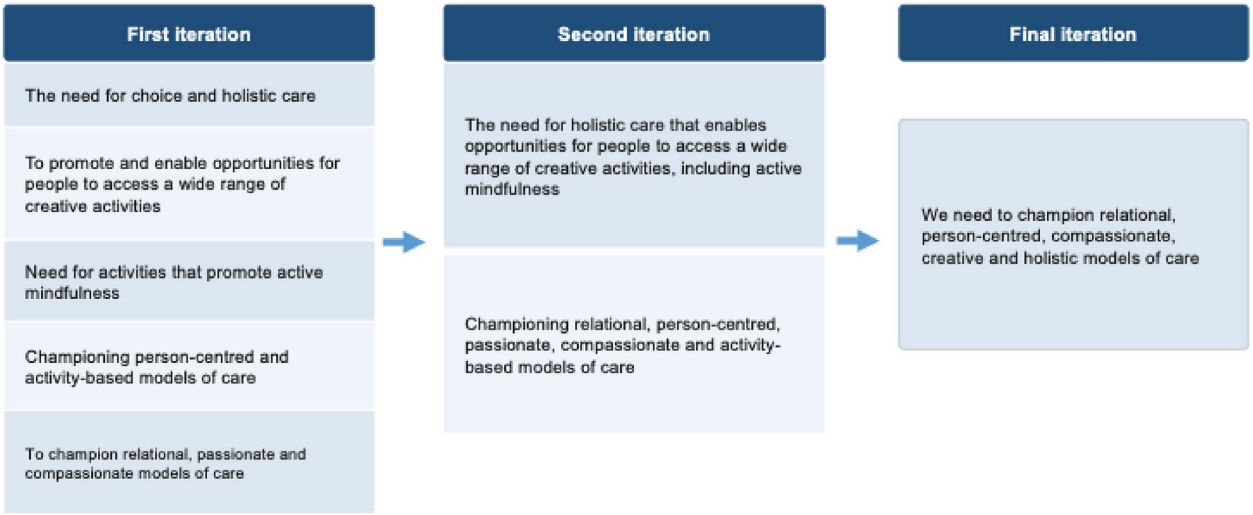


Fig. 2 Example of how stakeholder suggestions were consolidated: Iterative refinement within the context column

Additionally, after the meetings the researchers assessed each new item to determine its correct placement within the LM. In some cases this subjective decision required consensus within the research team. For example, "reducing barriers to help" was initially proposed for the community outcomes column, however upon reflection this was moved to individual outcomes. Likewise, the development of transferable and coping skills, hypothesised as individual impacts, were considered more appropriate for the individual outcomes column (Fig. 3).

All amendments made to the LM between the initial and final drafts were documented in a change log (Appendix), and the resulting final version of the LM is presented in Fig. 4.

A summary and quantification of the iterative changes made across the consensus meetings is presented in Table 2. The number of changes decreased across successive meetings, indicating that fewer changes and additions were required as the process progressed and suggesting that theoretical saturation was being approached.

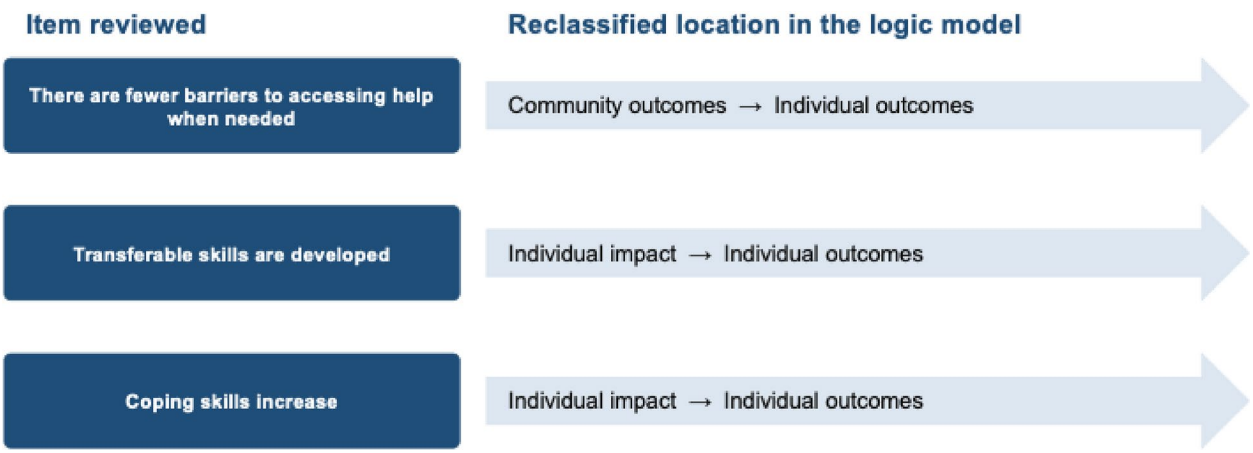


Fig. 3 Examples of items reclassified after researcher review because they fitted individual outcomes better than community outcomes or individual impacts

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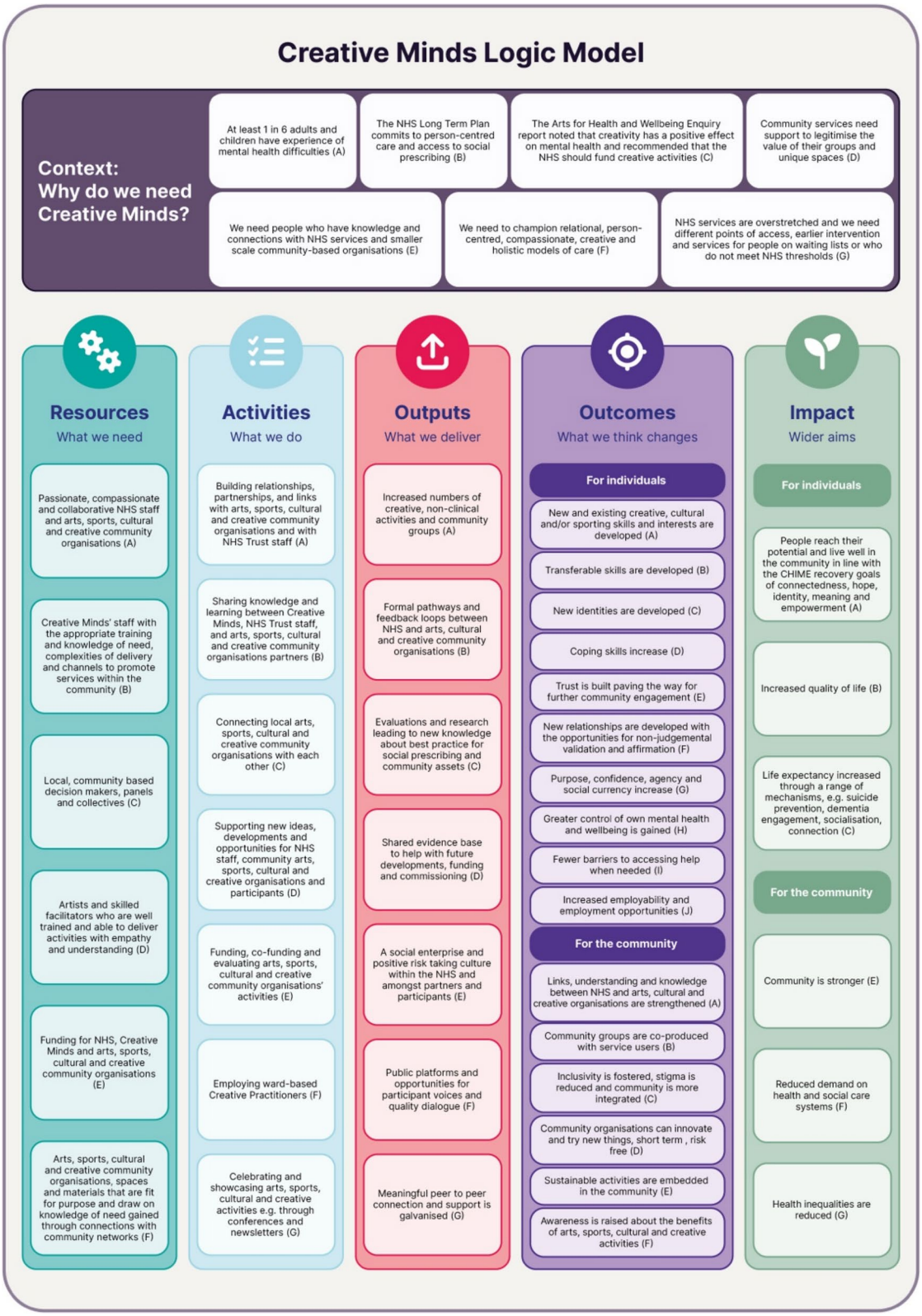


Fig. 4 The final iteration of the logic model ready for field testing

Table 2 Summary and quantification of iterative changes made to the logic model across successive consensus meetings, demonstrating the decreasing number of amendments as the model was refined

Column	Items presented at Consensus Group (CG)1	Items added following CG1 live editing and review	Items added following CG2 live editing and review	Items added following conference and CG3 editing and review	Items minimally changed or not changed through process	Items elaborated on during process	Items synthesised during process	Items moved or already covered
Context	3	11	0	0	3	3	11 → 4 between CG2 and conference	0
Resources	6	2	0	0	2	3	0	1 item already covered in context
Activities	11	1	0	0	3	1	8 → 3 between CG2 and conference	0
Outputs	5	4	0	0	2	5	4 → 2 between CG2 and conference	2 items already covered in outcome
Outcomes: individual	5	4	5	1	3	0	3 → 1 between CG2 and conference	5 imported: 4 from individual impact, 1 from community outcomes
Outcomes: community	5	2	1	0	2	2	2 → 1 between conference and CG3	2 imported: incorporated 2 suggestions from community impact
Impacts: individual	3	4	0	0	2	0	3 → 1 between CG2 and conference	3 exported: to individual outcomes
Impacts: community	4	1	0	0	4	0	0	1 exported to community outcomes

Relationships between logic model items

Following the consensus meetings, handwritten notes were reviewed and discussed within the research team to check that no suggestions from the participants had been missed. Additionally, notes were carefully examined for potential insight into the causal links between the items in the LM.

On some occasions it was noted that one item in the logic model was described as a precondition or necessary condition of a subsequent item and so the causal link was relocated to later column in the LM. However, participants did not always specify intermediate links meaning, that instead of linking to an item in an immediately adjacent column, these were more appropriately linked to a distal column. For example, one participant commented: *"If we are given funding from Creative Minds that enables us to become more sustainable"* making a direct link from resources to outcomes (Fig. 5).

Additionally, links were not always uni-directional (from left to right) across the LM. Feedback loops and non-linear relationships were also observed, as when an outcome strengthened or created a future resource: *"Having*

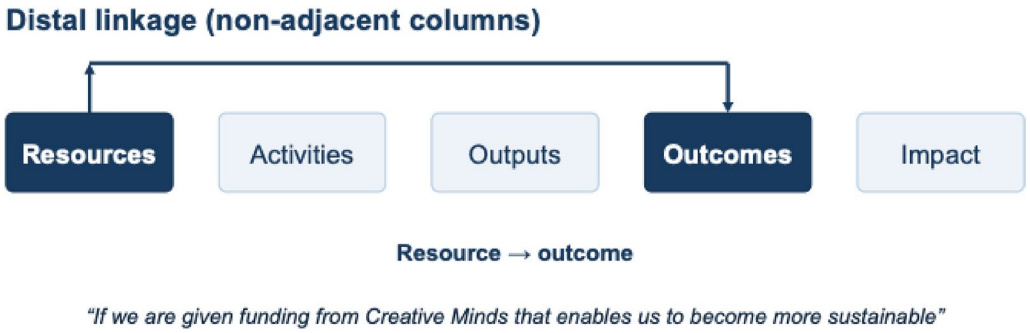


Fig. 5 Distal linkage from resources to outcomes

creativity in the community [outcome] enables staff in the NHS to become more creative" [Outcome linked back to Resource]. This is illustrated in Fig. 6.

Finally, not all the links noted were explicit and visible as above; some were more subtle. For example, discussions revealed the role of attitudinal change, as when the CM entrepreneurial ethos both facilitates and encourages the spread of ideas and onward enterprise:

> *"Supporting new ideas, facilitating change, being enterprising, builds enterprise, for example more peer led groups"*

It should be noted that these findings about causal links are tentative being based solely on researcher's notes. The workshops focussed primarily on developing the content of the logic model columns. Further research to capture mechanisms in an explicit and systematic way is therefore required.

Discussion

We used innovative methods to support co-production of an LM with CM stakeholders with the express aim of capturing lived experience and tacit knowledge. This decision was informed by the CM approach itself, that is, being collaborative and creative. We found that stakeholders readily understood and engaged with the process. In fact, some even reflected that they would take away helpful new knowledge about LMs and programme theories.

By encouraging lively discussion, the initial iterations of the logic model expanded rapidly. Participants were particularly keen to evidence the "pull" or need for CM, citing key sources including the Arts for Health and Wellbeing inquiry report [15] which notes the positive effects of creativity on mental health and recommends NHS investment in creative activities. Participants also substantially developed the hypothesised outcomes and impacts sections of the model. However, an important finding from the co-production process was that community-based stakeholders tended to hold deep, situated knowledge of their own activities, participants and local contexts, rather than system-level knowledge of the CM approach as a whole. Many therefore interpreted impact in relation to

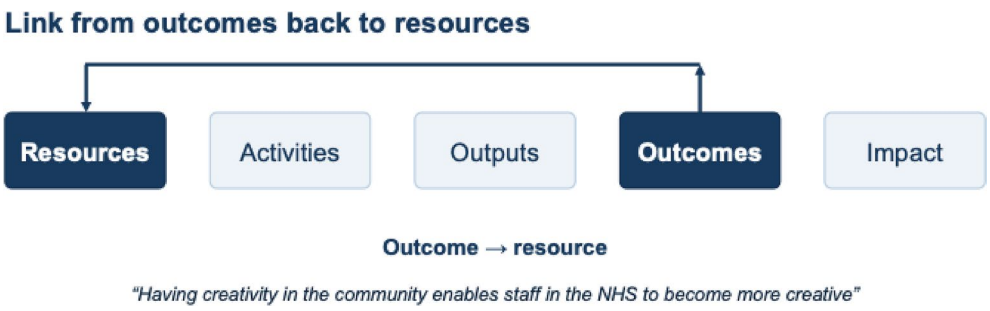


Fig. 6 Feedback loop link from outcomes to resources

their own organisation or project, rather than across the wider pathway linking NHS services, CM, community partners and service users. Stakeholder involvement is designed to surface different legitimate forms of knowledge from stakeholders and the fact that no single group can be expected to articulate the whole system poses significant design challenges for co-production in complex, multi-partner interventions. Once surfaced, these differences highlighted the need for a further analytic stage capable of bringing these situated accounts together into a system-wide understanding of pathways, relationships and mechanisms. Recognizing this, the next phase of the research uses pen-portrait vignettes to field-test and refine the drafted logic model, examine its legitimacy with stakeholders and develop a second analytic layer focused on pathways, relationships, mechanisms and context.

Strengths and weaknesses of the study

This research used novel approaches, including online consensus meetings and real time iterative model development. The research was undertaken in collaboration with NHS staff based in CM and the Research Development team and involved co-production with fifteen representatives of Voluntary Community and Social Enterprise (VCSE) organisations. Research governance and advice was provided by a LEAP composed of people with lived experience of secondary mental health service use.

One of the researchers was employed by the Trust that hosts CM and thus occupied an emic perspective, the other two researchers were not linked to the organisation and carried an etic perspective. Reflexive discussions with the research team and CM leaders about the role the researchers would play, as impartial developers and testers of the LM, sought to preserve equipoise.

The online format and live editing enabled busy stakeholders to participate in a relatively simple and time-efficient process, while allowing the content of the logic model to be developed and refined iteratively. However, this approach was less effective for exploring the mechanisms through which Creative Minds may produce change, and the outcomes and impacts identified remain hypothesised rather than empirically demonstrated. A fuller examination of mechanisms could have been supported by verbatim recording and analysis of the discussions, or by a separate workshop focused specifically on causal pathways and how the intervention is expected to work.

A further limitation relates to the structure of the consensus process. At the first consensus meeting, participants were presented with a draft LM which they were asked to review, refine and add to it. This approach was intended to make a time-limited online process accessible and manageable, particularly for participants unfamiliar with logic models. However, providing a predetermined structure and starting content may also have shaped the discussion and constrained the range of contributions.

Implications for future research

Further research is needed to streamline and improve methods for collaborative co-production of LMs. In particular further creative solutions for capturing mechanisms and causal linkages would be helpful. In the future, it would also prove helpful to use a tool or checklist to assess levels of co-production within this and similar projects.

Before the LM can be used in a formal evaluation of the CM approach, it is necessary to test whether it constitutes an accurate representation of what happens in practice. Therefore, the next step in the evaluation of the CM approach is to test the programme theory presented in the LM to ensure it accurately describes if and how the CM approach achieves the hypothesised outcomes. This research is currently underway and is being developed with the support of the same LEAP to ensure continuity of co-production and involvement.

Conclusions

We used a collaborative online procedure to co-produce a LM of a complex intervention linking a secondary care mental health trust with supportive community activities. This is a pragmatic, co-produced LM that is intended to provide an initial programme-theory structure for subsequent field testing, rather than a set of fully developed realist context-mechanism-outcome propositions. This research contributes to an expanding body of methods and procedures that can be used to co-produce LMs and, subsequently, to evaluate SP interventions. Specifically, outputs from this programme of research will be used to support implementation of person-centred creative approaches in NHS settings to support the recovery and long-term wellbeing of mental health service users.

Appendix: Table of iterative changes

Items presented at consensus group (CG) 1	Feedback from CG1 incorporated and presented at CG2	Feedback from CG2 presented at CM conference	Feedback from conference and CG3 incorporated into final draft
Context			
An estimated 1 in 6 adults have experienced a "common mental disorder" such as depression or anxiety in the past week Around 18% of children aged 7–16 had a probable mental health condition in 2022	17% adults have experienced common mental disorders and 18% of children aged 7–16 have a probable mental health condition	At least 1 in 6 adults and children have experience of mental health difficulties	At least 1 in 6 adults and children have experience of mental health difficulties
NHS Long Term Plan Commitment to personalised care and access to social prescribing	NHS Long Term Plan Commitment to person-centred care and access to social prescribing	The NHS Long Term Plan commits to person-centred care and access to social prescribing	The NHS Long Term Plan commits to person-centred care and access to social prescribing

Items presented at consensus group (CG) 1	Feedback from CG1 incorporated and presented at CG2	Feedback from CG2 presented at CM conference	Feedback from conference and CG3 incorporated into final draft
	To champion relational, passionate and compassionate models of care	We need to champion relational, person centred, compassionate, creative and holistic models of care	We need to champion relational, person centred, compassionate, creative and holistic models of care
	To enable early intervention in mental health problems To support community services without barriers	NHS services are overstretched, and we need for different points of access, earlier intervention and services for people who are on waiting lists or who do not meet NHS thresholds	NHS services are overstretched, and we need for different points of access, earlier intervention and services for people who are on waiting lists or who do not meet NHS thresholds
	The need for holistic care that enables opportunities for people to access a wide range of creative activities including active mindfulness Creativity has a positive effect on mental health Funding non-medical approach. Enabling a non-prescriptive approach and choice that would not otherwise be available	The Arts for Health and Wellbeing Enquiry report noted that creativity has a positive effect on mental health and recommended that the NHS should fund creative activities	The Arts for Health and Wellbeing Enquiry report noted that creativity has a positive effect on mental health and recommended that the NHS should fund creative activities
	To have people in the NHS who can reach out to smaller scale community groups To facilitate connections between clinical and non-clinical bodies To have people linked to the trust and the community that have knowledge of and connections with both	We need people who have knowledge and connections with NHS services and smaller scale community-based organisations	We need people who have knowledge and connections with NHS services and smaller scale community-based organisations
	To lend legitimacy to creative groups and boosts their standing with other funders To support existing community groups that have a dual focus of wellbeing and creativity	Community services need support to legitimise the value of their groups and unique spaces	Community services need support to legitimise the value of their groups and unique spaces
Resources			
NHS staff committed to collaborative shared-decision making	Passionate and compassionate NHS staff committed to collaborative shared-decision making	Passionate, compassionate and collaborative NHS staff and arts, sports, cultural and creative community organisations	Passionate, compassionate and collaborative NHS staff and arts, sports, cultural and creative community organisations
· Creative Minds staff	Creative Minds staff	Creative Minds' staff with the appropriate training and knowledge of need, complexities of delivery and channels to promote services within the community	Creative Minds' staff with the appropriate training and knowledge of need, complexities of delivery and channels to promote services within the community
VCSE partner organisations who can deliver creative community-based activities Local decision makers	Local decision makers, panels and collectives	Local, community-based decision makers, panels and collectives	Local, community based decision makers, panels and collectives
Funding for NHS, Creative Minds and VSCE partners	Funding for NHS, Creative Minds and VSCE partners	· Funding for NHS, Creative Minds and arts, sports, cultural and creative community organisations	· Funding for NHS, Creative Minds and arts, sports, cultural and creative community organisations
NHS mental health service users interested in joining community groups and activities	NHS mental health service users interested in joining community groups and activities	*Not seen as a resource as service user interest is part of "Pull"	

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Items presented at consensus group (CG) 1	Feedback from CG1 incorporated and presented at CG2	Feedback from CG2 presented at CM conference	Feedback from conference and CG3 incorporated into final draft
	Artists and skilled facilitators who are well trained and able to deliver activities with empathy and understanding	Artists and skilled facilitators who are well trained and able to deliver activities with empathy and understanding	Artists and skilled facilitators who are well trained and able to deliver activities with empathy and understanding
	Passionate and compassionate VCSE partner organisations who can deliver creative community-based activities	Art, sport, cultural and creative groups, spaces and materials that are fit for purpose and draw on knowledge of need gained through connections with community networks	Arts, sports, cultural and creative community organisations, spaces and materials that are fit for purpose and draw on knowledge of need gained through connections with community networks
Activities			
Sharing knowledge and learning between Creative Minds and NHS trust staff	Sharing knowledge and learning between Creative Minds, NHS trust staff and Arts, Cultural and VCSE partners	Sharing knowledge and learning between Creative Minds, NHS trust staff and arts, sports, cultural and creative community organisations partners	Sharing knowledge and learning between Creative Minds, NHS trust staff and arts, sports, cultural and creative community organisations partners
Connecting VCSE partners with each other	Connecting VCSE partners with each other	Connecting local arts, sports, cultural and creative community organisations with each other	Connecting local arts, sports, cultural and creative community organisations with each other .
Promoting opportunities and activities	Promoting opportunities and activities	Celebrating and showcasing arts, sports, cultural and creative activities for example, through conferences and newsletters	Celebrating and showcasing arts, sports, cultural and creative activities for example, through conferences and newsletters
Building relationships with NHS trust staff Building relationships and partnerships with VCSE community organisations Formalizing pathways and links	Building relationships with NHS trust staff Building relationships and partnerships with Arts, Cultural and Creative VCSE community organisations Formalizing pathways and links	Building relationships, partnerships and links with arts, sports, cultural and creative community organisations and with NHS Trust staff	Building relationships, partnerships and links with arts, sports, cultural and creative community organisations and with NHS Trust staff
Sharing knowledge and learning between VCSE partners Supporting project development	Sharing knowledge and learning between VCSE partners Supporting an enterprising culture and supporting groups' project development	Supporting new ideas, developments and opportunities for NHS staff, community arts, sports, cultural and creative organisations and participants	· Supporting new ideas, developments and opportunities for NHS staff, community arts, sports, cultural and creative organisations and participants
Funding VCSE partners to run community activities Local people making local decisions Evaluating funded projects	Funding and co-funding VCSE partners to run community activities Local people making local decisions Evaluating funded projects	Funding, co-funding and evaluating arts, sports, cultural and creative community organisations activities	Funding, co-funding and evaluating arts, sports, cultural and creative community organisations activities
	Employing ward-based Creative Practitioners	Employing ward-based Creative Practitioners	·Employing ward-based Creative Practitioners
Outputs			
Creative, non-clinical activities and community groups	More creative, non-clinical activities and community groups	Increased numbers of creative, non-clinical activities and community groups	Increased numbers of creative, non-clinical activities and community groups
Feedback loops between NHS staff and VCSE providers on community groups	Feedback loops between NHS staff and VCSE providers on community groups	Formal pathways and feedback loops between NHS and arts, cultural and creative community organisation	Formal pathways and feedback loops between NHS and arts, cultural and creative community organisation
Awareness among NHS staff of community activities and groups and how to signpost or refer service users to them	Awareness among NHS staff of community activities and groups and how to signpost or refer service users to them		

Items presented at consensus group (CG) 1	Feedback from CG1 incorporated and presented at CG2	Feedback from CG2 presented at CM conference	Feedback from conference and CG3 incorporated into final draft
Materials and resources are shared by partners	New knowledge about best practice for social prescribing and community asset building · Materials and resources are shared by partners	Evaluations and research leading to new knowledge about best practice for social prescribing and community asset	Evaluations and research leading to new knowledge about best practice for social prescribing and community asset
		Shared evidence-base to help with future developments, funding and commissioning	Shared evidence base to help with future developments, funding and commissioning
Opportunities for peer to peer connection and support	Platforms and opportunities for participant voices and quality dialogue A growing, shared evidence base that can help secure more funding	Public platforms and opportunities for participant voices and quality dialogue	Public platforms and opportunities for participant voices and quality dialogue
	Opportunities for peer-to-peer connection and support	Meaningful peer-to-peer connection and support is galvanised	Meaningful peer to peer connection and support is galvanised
	A new social enterprise culture within the NHS and amongst partners and participants	A social enterprise and positive risk-taking culture within the NHS and amongst partners and participants	A social enterprise and positive risk taking culture within the NHS and amongst partners and participants
	More sustainable Potential to become a commissioned project/activity	*Seen as covered by Community outcome: "Sustainable activities are embedded in the community"	
Hypothesised individual outcomes			
Service users learn, develop or improve skills and interests (for example, creative, sporting, fitness, leadership)	People learn, develop or improve skills and interests (for example, creative, sporting, fitness, leadership)	New and existing creative, cultural and/or sporting skills and interests are developed	New and existing creative, cultural and/or sporting skills and interests are developed
Service users develop new identities (for example, as artists, footballers, singers, dancers, group leaders)	· Service users develop new identities (for example, as artists, footballers, singers, dancers, group leaders)	· New identities are developed	· New identities are developed
· Service users feel more confident	People have purpose and somewhere to go People feel more confident Increases social currency (people have something to talk about in other settings)	· Purpose, confidence, agency and social currency increase	· Purpose, confidence, agency and social currency increase
	People take control of their own mental health and wellness	Greater control of own mental health and wellbeing is gained	Greater control of own mental health and wellbeing is gained
Stigma is reduced	Stigma is reduced	*Combined in community outcomes: "Inclusivity is fostered, stigma is reduced and community is more integrated"	
Service users make new interpersonal connections and networks or strengthen existing ones	People make new interpersonal connections and networks or strengthen existing ones	*Seen as potentially covered by Output: "Meaningful peer-to-peer connection and support is galvanised"	New relationships are developed with the opportunities for non-judgemental validation and affirmation (Reinstated following feedback from conference)

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Items presented at consensus group (CG) 1	Feedback from CG1 incorporated and presented at CG2	Feedback from CG2 presented at CM conference	Feedback from conference and CG3 incorporated into final draft
		Trust is built paving the way for further community engagement (relocated from Individual Impact)	Trust is built paving the way for further community engagement
		Fewer barriers to accessing help when needed (relocated from Community Outcomes)	Fewer barriers to accessing help when needed
		Transferable skills are developed (relocated from Individual impact, generated form Consensus 2)	Transferable skills are developed
		Coping skills increase (relocated from Individual Impact, generated form Consensus 2))	Coping skills increase
		Increased employability and employment opportunities (relocated from Individual Impact)	Increased employability and employment opportunities
Hypothesised community outcomes			
Links between health and VCSE sector strengthened	Links between health and VCSE sector strengthened	Links, understanding and knowledge between NHS and arts, cultural and creative organisations are strengthened	Links, understanding and knowledge between NHS and arts, cultural and creative organisations are strengthened
New knowledge created about best practice for social prescribing and community asset building	Understanding is built in clinical settings about creative approaches		
Service users co-produce community activities	Service users co-produce community activities	Community groups are co-produced with service users	Community groups are co-produced with service users
	There are fewer barriers to accessing help when needed	*Relocated to outcomes for individuals	
Inclusivity is fostered	Inclusivity is fostered	Inclusivity is fostered, stigma is reduced and community is more integrated	Inclusivity is fostered, stigma is reduced and community is more integrated
Community is more integrated	Community is more integrated	Sustainable activities are embedded in the community (Integrating suggestion from Impact–community)	Sustainable activities are embedded in the community
		Awareness is raised about the benefits of arts, sports, cultural and creative activities (Integrating suggestion from Impact–community)	Awareness is raised about the benefits of arts, sports, cultural and creative activities
	Community organisations can innovate and try new things, short term risk free	Community organisations can innovate and try new things, short term risk free	Community organisations can innovate and try new things, short term risk free .
Hypothesised Individual Impact			
Increased quality of life	Increased quality of life	Increased quality of life	Increased quality of life
People are supported to reach their potential and live well in the community	People are supported to reach their potential and live well in the community	People reach their potential and live well in the community in line with the CHIME recovery goals of connectedness, hope, identity, meaning and empowerment	People reach their potential and live well in the community in line with the CHIME recovery goals of connectedness, hope, identity, meaning and empowerment
CHIME recovery goals (connectedness, hope, identity, meaning, meaning and empowerment) are supported and sustained	CHIME recovery goals (connectedness, hope, identity, meaning, meaning and empowerment) are supported and sustained		
	More confident to make own informed decisions		

Items presented at consensus group (CG) 1	Feedback from CG1 incorporated and presented at CG2	Feedback from CG2 presented at CM conference	Feedback from conference and CG3 incorporated into final draft
	Trust is built (that is, positive experience in a short term project can lead to increased trust and a move to longer term engagement)	Relocated to outcomes for individual	
	Increased coping skills	Relocated to Outcomes for individual	
	Increased employability / transferable skills plus increased employment opportunities	Relocated to Outcomes for individual	
	Life expectancy increased through a range of mechanisms (for example, suicide prevention, dementia engagement, socialisation, connection)	Life expectancy increased through a range of mechanisms (for example, suicide prevention, dementia engagement, socialisation, connection)	Life expectancy increased through a range of mechanisms (for example, suicide prevention, dementia engagement, socialisation, connection)
Hypothesised community impact			
Community is strengthened	Community is strengthened	Community is stronger	Community is stronger
Sustainable community activities develop	Sustainable community activities develop	*Relocated in part to Outcomes: community	
Reduced demand on health and social care systems	Reduced demand on health and social care systems	Reduced demand on health and social care systems	· Reduced demand on health and social care systems
· Health inequalities are reduced	Health inequalities are reduced	Health inequalities are reduced	Health inequalities are reduced
	Creative practice is embedded within the NHS Trust	Creative practice is embedded within the NHS Trust	Creative practice is embedded within the NHS Trust

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Data availability This manuscript includes all the data that were recorded.

Declarations

Ethics approval and consent to participate Ethical review was conducted by the University of Sheffield Ethics Committee (reference no. 053172). All participants provided informed consent including for the publication of findings.

Competing interests JS is employed by the NHS trust that hosts Creative Minds.

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