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Leading the spread and adoption of innovation at scale: An Academic Health Science Network's perspective

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Abstract

There is virtually no limit to the number of innovations being developed, tested and piloted at any one time to improve the quality and safety of care. The perennial problem is spreading innovations that are proven to be effective on a smaller scale or under controlled conditions. Much of the literature on spread refers to the important role played by external agencies in supporting the spread of innovations. External agencies can provide additional capacity and capabilities to adopter organisations, such as technical expertise, resources, and tools to assist with operational issues. In England, the NHS established 15 Academic Health Science Networks (AHSNs) to help accelerate the spread and adoption on innovation in healthcare. However, formal clinical-academic networks (such as AHSNs) of themselves will not deliver positive, tangible outcomes on the ground (i.e. evidence-based innovations embedded at scale across a system). This begs the question of how do AHSNs practically go about achieving this change successfully? We provide an AHSN's perspective on how we conceptualise and undertake our work in leading implementation of innovation at scale.

Our approach is a collaborative process of widening understanding of the innovation and its implementation. At its core, the implementation and spread of innovation into practice is a collective social process. Healthcare comprises complex adaptive systems, where contexts need to be negotiated for implementation to be successful. As AHSNs, we aim to lead this negotiation through facilitating knowledge exchange and production across the system to mobilise the resources and collective action necessary for achieving spread.

Introduction

During 2013-2014, NHS England established 15 Academic Health Science Networks (AHSNs) to help accelerate the spread and adoption on innovation in healthcare. The role of AHSNs is to deliver a step-change in the way the NHS and social care identify, develop and adopt existing evidence-based innovations at scale. It is left to each of the AHSNs to determine how this is best achieved locally. However, formal clinical-academic networks

(such as AHSNs) of themselves will not deliver positive, tangible outcomes on the ground (i.e. evidence-based innovations embedded at scale across a system) [1,2]. This begs the question of how do AHSNs practically go about achieving this change successfully? We provide an AHSN's perspective on how we conceptualise the spread and adoption of innovation and give a case study to illustrate how we undertake our work in practice to lead scale-up across systems. This draws together perspectives from individuals in senior leaderships roles involved in the AHSN's work from across clinical, managerial, and academic domains (e.g. medical/clinical Directors, a programme director, and senior academics).

Historically, the research and innovation 'pipeline' has been geared towards a push model and consequently we see virtually no limit to the number of innovations being developed, tested and piloted at any one time. More recently, we are seeing a shift towards focusing on articulating needs more clearly and identifying (or developing) innovations that appropriately address these needs [3,4]. However, the perennial problem remains to how innovations can be implemented at scale to delivery intended benefits effectively [5].

Much of the literature on spread refers to the important role played by external agencies in supporting the spread of innovations [6,7]. External agencies can provide additional capacity and capabilities to adopter organisations, such as technical expertise, resources, and tools to assist with operational issues [6,8]. Spread is also supported by continuous relationship building and partnership development activities [9]. Therefore, part of the way organisations can work most effectively to support the spread of innovations is by developing partnerships, collaborations, and networks with key stakeholders [10,11].

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69 **Conceptualising spread and adoption: An AHSN perspective**

70 Our experience as the AHSN for south London (or Health Innovation Network) resonates
71 with the literature that there is no one "right way" to implement innovations at scale [5],
72 and that spread and adoption is a non-linear, iterative, participatory, and resource intensive
73 process [5,9,12]. At its core spread is a process about building capacity and capabilities at
74 multiple levels: individuals, organisations, and systems [5,8,13]. For spread to be effective it
75 needs to be a planned, resourced, and managed approach, where consideration is given to
76 developing the infrastructure required to support the individuals, organisations, and
77 systems involved in the process [6,9].

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79 Whilst spread efforts are a planned process underpinned by sound project and programme
80 management, there also has to be a large amount of pragmatism to 'make it happen' . Our
81 approach is underpinned by an ethos of working with the willing and remaining open to
82 unforeseen opportunities. The need for flexibility is necessary to be able to respond to the
83 turbulence and continuous change within the wider system [14]. Complexity theory
84 recognises the limits of using formally planned approaches in complex adaptive systems,
85 which have a countless array of parts and interdependencies that lead to unforeseen
86 outcomes [1,15,16]. It accepts that local contextual factors are difficult to influence as they
87 are emergent, dynamic and self-organising [1,15–17]. As a consequence, for interventions
88 to spread we need to understand local variation and focus on adapting interventions to
89 integrate into individual practice settings, rather than hold a uncompromising pre-
90 occupation with standardisation [15,17].

At its core, the implementation and spread of innovation into practice is a collaborative, collective social process [18,19]. The implementation of evidence into practice has typically been approached as a problem of knowledge transfer where the issue lies in the dissemination of knowledge from research to practice [20]. However, this framing ignores that practitioners create their own knowledge through their own experiences. It may be more helpful to re-frame it as a problem of knowledge production. All parties have partial and different knowledge; therefore, exchange and interaction by all parties is needed to create meaningful and actionable knowledge that is context and purpose specific [20]. This relies on shifting from a narrow concept of knowledge to include informal and tacit knowledge [21,22]. Kitson and colleagues suggest we move away from the idea of a 'gap', where users (as passive and peripheral recipients) and producers of knowledge or innovation engaged in push-pull activities, to a '*space'* or '*synapse of interaction and connectivity*' [1].

Using this conceptualisation, as an AHSN we work to draw on our own and providers' practical experience of implementing innovation and combined this with formal evidence (e.g. research and evaluation), to reconstruct and evolve knowledge about the intervention and how to implement it across multiple contexts to achieve scale-up [18]. Our approach is to understand and drive the adaptive work needed to implement innovations successfully in different contexts, in order to support spread [17]. This largely focuses on ways to test spread by exploring and evaluating elements relating to where the intervention is delivered, who delivers it, to whom it is targeted, and how best to share this knowledge with prospective adopters and commissioners.

Perhaps the best analogy to illustrate our work is gardening. The role of AHSNs is like expert gardeners or cultivators in a complex landscape. A need is identified that every patient in the country should have ready access to a new variety of tomato. There is a vision of this new crop being grown in every place in the land, but unfortunately there are very few vacant fields and the soil is in various levels of readiness or appropriateness to grow this particular variety of tomato. So AHSNs are asked to support. We know the land. We help prepare the ground. We make sure we understand the plant and also what the plant is due to provide, and whether there are other varieties that might be more appropriate for certain conditions.

The approach to our groundwork is founded on the insights of clinical academics in implementation science. Our theory of change - the reasoning behind why we think our chosen approach is going to get us from A to B - depends on the unique circumstances present. The nature of spread and adoption work varies based on the specific innovation, barriers, enablers, and knowledge in the system. Thus, we do not use the same approach all the time or everywhere.

Being part of a network of AHSNs, which have grown up with a variety of approaches, is a strength and something the ASHN network capitalises on. We are skilled in collaborative working; expert in building trust amongst people across different organisations and parts of the system. It is important that our organisation does not performance manage our members and we make it clear that we use data and information to motivate change and

bring insight rather than judge – whilst at times harnessing healthy competition between organisations who are then enabled by us to learn from one another.

Spread and adoption in practice: An AHSN case study

We support the spread and adoption of a wide range of innovations across a diverse number of settings: service-level interventions, digital platform for referrals, patient safety devices, and new diagnostic tests that change care pathways. The AHSNs also coordinate to support the scale-up of a set of national programmes (e.g. PReCePT - Preventing cerebral palsy in preterm babies; PINCER - Preventing prescribing errors in primary care; Serenity Integrated Mentoring – Supporting people with complex behavioural disorders who place high demands on emergency services and mental health teams). We will use one of these national programmes, ESCAPE-pain, as a case study to illustrate how AHSNs work in practice to achieve scale-up.

The problem and the intervention: Osteoarthritis and the ESCAPE-pain programme

There are approximately 8.75 million people in the UK living with osteoarthritis (OA) and this is projected to increase to 17 million by 2030 [23,24]. OA is a major cause of disability with a large socio-economic burden [25]. Despite NICE guidance [26] and proven interventions (such ESCAPE-pain), the management of OA remains sub-optimal because the evidence-base is not being implemented into practice [27,28]. ESCAPE-pain promotes self-management to improve quality of life and function [29–31]. The programme is delivered over six weeks via two weekly group sessions that last 45-60 minutes (with 15-20 minutes of structured education and 30-45 minutes of individualised exercise). ESCAPE-pain was shown to be clinical and cost-effective through a large cluster randomised controlled trial and economic evaluation [29,30,32].

AHSN involvement in spread

In 2014, ESCAPE-pain was selected by the AHSN for south London (Health Innovation Network) as a priority for local scale-up. In April 2018, it became a national programme for scale-up supported by England's 15 AHSNs for a 2-year period. Scale-up was coordinated by a national programme manager and locally dedicated resource (e.g. project manager, clinical champion) within each AHSN.

Scale of spread achieved

Following the AHSN Network national programme, ESCAPE-pain is now being delivered in 260 sites with over 16,000 people with hip and knee OA completing the programme. This is a 4-fold increase in the number of sites and 3-fold increase in the number of participants compared to the start of the national programme in April 2018. The growth in sites during 2018-2020 has been accompanied by a substantial expansion in geographical spread beyond London and South East England to include sites across all regions in England. This spread has been accompanied by an expansion in the models of delivery for ESCAPE-pain across an increasing range of settings (NHS and non-clinical community), providers (NHS, community leisure, local authority) and practitioners (physiotherapists, therapy assistants and fitness professionals) i.e. 53.5% of sites delivering the programme are non-clinical, community settings. Critically, monitoring of clinical outcomes demonstrates that ESCAPE-pain continues to be clinically effective in 'real world' settings at levels comparable to the original RCT [33].

Coordinating the AHSN Network's national programme for ESCAPE-pain

The approach to coordinating the AHSN national programme for ESCAPE-pain has been underpinned by developing a cohesive partnership between AHSNs via peer support and knowledge sharing. The ESCAPE-pain core team based at the south London AHSN used a

range of approaches (e.g. regular webinars, face-to-face learning network meetings, FutureNHS collaborative online platform, annual review and planning meetings) to allow existing knowledge about spreading ESCAPE-pain to be shared, and to capture and exchange learning that emerged from the AHSN Network during the national programme (e.g. local contextual issues, strategies for local spread). Collectively, the AHSNs used this learning to develop a suite of resources to support local spread efforts (e.g. resources for commissioners with cost modelling, an implementation toolkit for providers, patient case studies, and marketing materials).

In addition, the AHSNs developed a coordinated national monitoring programme to evaluate the scale and impact of spread (e.g. collecting data on the number of sites, location of sites, type of provider and site, number of cohorts and participants, and pre/post clinical outcomes). This has required significant investment in developing and maintaining monitoring and evaluation activities and infrastructure.

AHSNs' approaches to implementing and scaling-up ESCAPE-pain

What we know from the literature that implementation strategies need to be chosen and tailored to accommodate the characteristics of the intervention, provider (or adopter), the team resourced to support implementation, and the wider system (or environment) [34–36]. Key strategies used by AHSNs to implement ESCAPE-pain successfully were:

- Developing stakeholder inter-relationships – Identifying and supporting local champions and early adopters, building local partnerships and consensus for ESCAPE-pain (i.e. identifying and agreeing the need and fostering a commitment and urgency to implement), and working with partners from across the system (e.g.

providers and commissioners from the NHS, local authority, and leisure and community sector)

- Training and education – Developing and rolling out a mandatory 1-day training course on how to deliver and implement the programme, developing a suite of tailored and packaged resources about the evidence, delivery, and implementation of ESCAPE-pain. This involved developing a national network of trainers (largely drawn from local champions and the national team).
- Using financial measures – Funding and contracting for ESCAPE-pain, for example embedded it within tenders, payment for delivering the programme, and providing free training.
- Providing interactive assistance – Local AHSNs and the national team providing on-going technical assistance to partners to support implementation. This included providing information and support around decision-making to adopt (e.g. business case templates, attending key meetings), resources and advice on implementation and delivery (e.g. implementation toolkit, site visits), and helping to problem-solve any issues impeding implementation.
- Using evaluation and iterative strategies – a key approach used by AHSN has been to test and refine different ways of implementing ESCAPE-pain, to identify and share key barriers and facilitators, and learn about what works across a variety of settings and delivery models (e.g. exercise on referrals schemes, NHS-leisure provider partnerships). The on-going monitoring of ESCAPE-pain has facilitated scale-up by providing evidence to key decision-makers about its clinical and cost effectiveness in 'real world' settings.

AHSNs' choice of strategies was determined by a range of factors, such as the characteristics of providers (e.g. NHS, non-NHS community), the resources allocated within the AHSN to support work on ESCAPE-pain, and the wider system (e.g. extent of (dis)engagement by commissioner and key strategic decision-makers). Determining and deploying appropriate strategies required AHSNs to (1) be clear about their offer to local systems, including the level of resource available to support local implementation efforts; (2) clarify the scope of focus to their work on ESCAPE-pain i.e. targeting specific part of the system (e.g. only NHS providers) versus casting the net more widely; and (3) recognise the need for a multifaceted approach that engages directly with providers, as well as at operating at a system level (e.g. commissioners, interorganisational partnership).

It is important to note that ESCAPE-pain has not been successful spread in all locations, where key barriers have been intractable and/or too many in number (i.e. a 'perform storm' of barriers). The factors most consistently encountered by AHSNs that impede the local scale-up of ESCAPE-pain were: (1) Current (predominant) funding models that are activity-based and prioritise in-year cost savings within commissioners' budgets. These models do not readily support the implementation of new interventions (such as ESCAPE-pain), which require greater upfront investment compared to incumbent interventions and may realise benefits in the long-term and across health and social care systems; (2) Attitudes towards evidence and evidence-based practice, particularly amongst senior managers and senior clinicians. Despite existing local alternative programmes having limited (or no) evidence of clinical and cost effectiveness, appetite for change could be low resulting in an unwillingness to replace their own programme with ESCAPE-pain.

Conclusion

The idea of the movement of research and innovation into practice as a pipeline is a poor conceptualisation of what happens in practice; the reality is a much messier and non-linear process. Our experience of the spread and adoption is that of a collective process underpinned by a process of exchanging knowledge (both formal and tactic) across systems. This process aims to build consensus and understanding about needs, viable solutions (or innovations) and their implementation. The spread of innovation is also about trying to understand local variation, but contextual factors are difficult to influence as they are dynamic and self-organising driven by the interactions and relationships between the components of the system. This makes it difficult to have a universal 'blueprint' for our work. In practice, our approach is to use strategies that deliberately support collaboration, flexibility, and partnership. By actively facilitating greater connectivity we can support systems to negotiate and mobilise the resources (e.g. knowledge, financial, relational) needed to spread and adopt innovation successfully.

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