

HEALTH SYSTEMS FOR PROSPERITY AND SOLIDARITY
Hans Kluge & Josep Figueras (eds.)

POLICY BRIEF

How do we ensure that innovation in health service delivery and organization is implemented, sustained and spread?

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Keywords:

Delivery of Health Care
– organization and administration
Health Care Reform
Efficiency, Organizational
Organizational Innovation
Diffusion of Innovation

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How do we ensure that innovation in health service delivery and organization is implemented, sustained and spread?

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ACKNOWLEDGEMENTS

The following individuals reviewed or commented on this policy brief:

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The country examples used in this brief draw on work that was partly supported by the World Bank as part of the project 'Case Studies on People Centered/Integrated Health Care in OECD countries'; case studies were prepared by Sidsel Marie Runz-Jørgensen and Anne Frølich (Denmark), Helmut Hildebrandt, Alexander Pimperl, Oliver Gröne et al. (Germany), and Hubertus JM Vrijhoef and Guy J Schulpen (Netherlands).

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Key messages

- Health systems in Europe are facing the combined challenge of increasing demand because of a rising burden of chronic disease and limited resources.
- This creates a pressing need for a fundamental rethink of the way health services and systems are organized and financed.
- Experiences in European countries show that it is possible to improve services through innovation locally, but more needs to be done to ensure that they benefit the population at large.
- The processes involved in introducing innovation range from adoption, implementation, sustaining, spreading or diffusion, dissemination and scale up; they overlap in complex ways, which means that service innovation is almost never straightforward.
- Increasingly, innovation in health services involves the development, introduction and mainstreaming of new technologies, which traditionally have had a high failure rate in the health care sector.
- In this policy brief we identify the key factors that positively influence the entire implementation process:
 - leadership and management at different tiers that are supportive of and committed to change, including the articulation of a clear and compelling vision;
 - early and widespread stakeholder involvement, including staff and service users;
 - dedicated and ongoing resources, including funding, staff, infrastructure and time;
 - effective communication across the organization;
 - ongoing adaptation of the innovation to the local context;
 - ongoing monitoring and timely feedback about progress; and
 - evaluation and demonstration of the (cost-)effectiveness of the innovation being introduced, including assessment of health benefits.
- Those considering service innovations need to be clear whether a given innovation is worth introducing (the value proposition); due attention needs to be given to who will benefit and how to minimize unintended consequences, for example, excluding more marginalized populations from accessing the innovation.
- They also need to be aware of competing or complementary innovations, which may lead to disengagement, fatigue and uncertainty among stakeholders, and, possibly, increased cost.
- Context is key, and the successful implementation, sustaining and spread of innovation require a broad range of interventions and continuous adaptation to a changing service and wider context, including political, cultural and institutional aspects.
- Organizations and services require sufficient time to learn to function in new ways.
- People's perspectives on and priorities for service innovation should be explicitly considered if countries are serious about achieving people-centred health systems.
- There is need for responsible innovation to ensure that the benefits of innovation are widely distributed and shared, are sustainable and meet societies' needs more broadly.

Executive summary

Countries in Europe are experimenting with innovative ways of organizing and delivering health care to better meet people's increasingly diverse health and care needs. In practice, it has been difficult to **translate necessary change into large-scale, sustainable and effective strategies**. Implementing innovations is **complex** and there is a need to better understand the **key factors that support the successful introduction of service innovation**, from adoption to sustaining, spreading and scaling.

This policy brief is a contribution to this effort by (i) reviewing the main frameworks and factors that have been identified as supportive for the successful introduction of innovation in service organization and delivery and (ii) illustrating these factors using selected examples of service innovations in European countries.

We define service innovation in health service delivery and organization as a **novel** set of behaviours, routines, and ways of working that are **discontinuous** with previous practice, are directed at **improving** health outcomes, administrative efficiency, cost-effectiveness, or users' experience and that are implemented by planned and coordinated actions.

The introduction of service innovation is not a single event but a series of 'implementation processes'

The processes involved in introducing innovation are commonly described as **adoption, implementation, sustaining, spreading or diffusion, dissemination and scale up** (we summarize these as 'implementation processes'). Each involves a series of processes in themselves, and they rarely follow a linear and predictable sequence. Instead, they tend to be 'messy', **dynamic and interact in ways that are often not knowable**.

Some innovations in service organization and delivery are easier to implement, sustain and spread than others. Even a seemingly simple innovation may be difficult to implement. For example, the introduction of digital health technologies may raise major technical or regulatory issues, or professional bodies consider their use in clinical care as compromising professional practice. There is a need to consider the innovation in the **context** of the implementation processes, the intended users and other stakeholders involved, and the broader setting within which it is being introduced.

Furthermore, what is seen as service innovation in one setting might already be routinely used in another. This issue presents an important challenge for policy-makers and practitioners looking elsewhere for inspiration to innovate service delivery and organization. We do not examine this question specifically in this brief, but many of the lessons learned from the implementation literature that we examine are also relevant for the cross-system translation of innovations.

Several factors enable these 'implementation processes'

A large body of work has studied the take up of innovation in health. This often focuses on the early processes of adoption and implementation. Yet, a seemingly successful initial implementation of a service innovation, such as the introduction of new roles or integrated care pathways, does not always lead to sustained, longer-term change.

In this brief, largely building on the seminal work of Greenhalgh and colleagues, we have identified a wide range of factors that support the successful adoption, implementation, sustainability, spread and scale up of service innovations [1, 2]. These are:

- **leadership and management** at different tiers that are supportive of and committed to change, including the articulation of a **clear and compelling** vision;
- early and widespread **stakeholder involvement**, including staff and service users;
- **dedicated and ongoing resources**, including funding, staff, infrastructure and time;
- effective **communication** across the organization (and, where relevant, between organizations);
- **adaptation** of the innovation to the local **context** and integration with existing programmes and policies;
- ongoing **monitoring and timely feedback** about progress; and
- **evaluation** and demonstration of (cost-)effectiveness of the innovation being introduced, including assessment of health benefits.

The introduction of service innovation is complex and dynamic

The above success factors do not exist or act in isolation. Instead, they interact with each other, with the innovation and with the wider context within which the innovation is being introduced. The **nature of these interactions will vary between contexts and settings**, often in unpredictable and typically **complex ways**. This means that the successful introduction of innovation will require an **entire package of interventions** because it often involves significant change in the way health services and systems function. It should also take account of the political, cultural, institutional and wider contexts, and that **time** will be required to enable organizations and services to (learn to) function in new ways.

Examples from Europe confirm the importance of the key enabling factors

Experiences of service innovation in the coordination of care for people with chronic conditions in Europe show how the key success factors identified in this policy brief have played out in practice. The following factors were central to successful initiatives.

- **Leadership and management** to ensure support and advocacy, with key components including:
 - setting up appropriate governance and management mechanisms;

- development of accountability agreements, in particular where multiple collaborating partners and organizations are involved;
- development of performance agreements, including the use of sanctions for breaching processes and procedures; and
- provision of sustained support to participating organizations.
- **Widespread stakeholder involvement**, including key and front-line staff, most often in the context of developing structures, guidelines and indicators in order to secure ‘buy-in’ from participating staff, in particular physicians, and organizations.
- **Dedicated and continuing resources** in the form of:
 - a design and implementation team to guide implementation;
 - start-up funding to strengthen capabilities and readiness (although this was not necessarily seen as a key factor that facilitated implementation);
 - sufficient time to enable organizations and services to learn to work in new ways; and
 - strategic investment in staff and capacity-building.
- **Adaptation to local context** by building on local relationships and local capacity, thereby allowing a focus on what is relevant and what works locally. Wider spread of innovative service models beyond the local area will likely require some modification to enable take up. For this to be successful requires **building strong foundations of political support at the different tiers of the system and, likely, adapting funding models**.
- **Ongoing monitoring and feedback** through the systematic collection of data to assess performance and identify opportunities for improving access, quality, efficiency and patient experience. Monitoring may also include efforts to identify problems to be fed back to participating organizations. Lack of strategic investment into effective communication may lead to suboptimal implementation, and, possibly, performance of the service innovation.
- **Demonstration of effect** through systematic and ongoing evaluation in terms of processes and outcomes as well as utilization and cost. Evidence of effectiveness was vital for the wider diffusion and dissemination of successful initiatives.

Much progress has been made but more needs to be done to achieve lasting, large-scale and effective transformation towards people-centred health systems

Those considering innovations need to be clear whether a given innovation is worth introducing, namely its **value proposition**. Innovations are often assumed to be beneficial, but they may have unintended, and sometimes undesirable, consequences. Due attention needs to be given to who will benefit and how, and the **likely unintended consequences**, in particular as these relate to access, uptake and use of the new service or technology. For example, the introduction of digital health technologies may exacerbate existing health inequalities if implementation strategies fail to consider the persistent digital divide in the population. Implementers also need to be aware of **competing or complementary innovations**, which may lead to disengagement, fatigue and uncertainty among stakeholders, and, possibly, increased cost.

Continued evaluation of service innovations is fundamental to enable sustainable implementation and wider spread or scale up. There are likely to be **trade-offs between what evidence is desirable and what is available**. In times of resource constraints, perspectives on evidence may emphasize cost savings or efficiencies. This may be challenging to show for more complex innovations and longer-term evaluation frameworks may be needed to demonstrate evidence of effect.

Finally, the ultimate end-users of the innovation, namely patients, their carers and the wider community, are frequently not considered in innovation efforts. There is need for the **explicit consideration of the perspectives and priorities of the public in service innovation** if countries are serious about achieving people-centred health systems.

What we do not know

The factors described here represent those that have been identified in the published literature. There is an urgent need for longitudinal studies that systematically **evaluate the introduction of service innovation over time** to better understand the impact of those factors, such as the role of power relationships between different stakeholders at the different levels of the health system, that have received less attention. This should also include **systematic assessment of the types of strategies that are likely to work best in what context and under what conditions**, keeping the complexities involved in mind. A single, overarching strategy that seeks to implement change at scale is unlikely to be effective if local idiosyncrasies are not taken into account.

Introduction

European health systems are facing numerous challenges. There have been significant advances in people's health and life expectancy, but improvements have been unequal within and across countries. Key issues include the rising burden of chronic health problems and multimorbidity, with changing demand imposing considerable strain on systems that are already stretched because of financial constraints and workforce challenges. This creates a pressing need for the efficient use of resources and a fundamental rethink in the way systems are organized and financed [3].

Policy-makers in European health systems have recognized these challenges and many countries are experimenting with novel ways of organizing and delivering health care to better meet people's increasingly diverse health and care needs [3]. There are promising examples in many settings [4], but these are often implemented as time-limited pilots or small-scale, localized projects [3]. It has been difficult to translate needed change into large-scale, sustainable and effective strategies to service organization and delivery more widely [5].

Such change is complex. There are several reasons for this. For one, the introduction of novel delivery structures is not a one-off event. Instead, it comprises a series of interlinked, and at times overlapping processes, which encompass adoption, implementation, sustaining, spreading and scaling. These processes involve different actors at different points in time and with different roles and responsibilities that will vary from setting to setting. Further, implementation processes are complex, and their success is strongly dependent on the context within which service innovations are being introduced. 'Context' is broad of course, encompassing individual, team and organizational level factors, factors related to the immediate circumstances within which innovation takes place and those linked to the wider socio-political and economic environment and regulatory framework. All of these are likely to change over time. Importantly, context varies and the same factors that act as enablers in one setting might hinder implementation processes in another one.

This is not to say that innovation in service organization and delivery is not possible. Innovation is unavoidable and indeed essential if we are serious about creating sustainable health systems that meet people's needs. To support this process, we draw on a rich literature that has examined the various factors that can positively impact implementation of service innovation, from adoption to sustaining, spreading and scaling.

What this brief seeks to contribute

In this policy brief we seek to understand what 'makes or breaks' innovative solutions in health service organization and delivery. Specifically, we aim to answer the question:

What are the key factors and strategies that support the successful adoption and implementation, sustaining, spreading and scaling of innovation in health service organization and delivery?

A main challenge in the field of 'innovation implementation' is that of terminology. A wide range of terms are frequently used interchangeably, and they are interpreted differently in different contexts. We therefore begin by defining some of the key terms that we use throughout this policy brief. We then review the main frameworks and factors that have been identified as supportive for the successful introduction of innovation in service organization and delivery. The methodological approach used is described in the Appendix (Box A1). Next, we illustrate these factors using selected examples of service innovations in European countries. We conclude with a final section outlining implications for policy on how to ensure the adoption, implementation, sustainability, spread, and, where appropriate, scale up of promising innovations in the organization and delivery of health services.

What we mean by 'innovating service design and delivery' in the context of this brief

What is 'innovation'?

The term 'innovation' is widely, but variously used. Often seen as "a panacea for resolving many problems" [6] (p. 5), it remains unclear what precisely is meant by it in different contexts [6, 7]. In Box 1 we set out how innovation has been defined in the literature.

Box 1: What defines innovation: novelty, added value and discontinuous change

Rogers defined an innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" [7] (p. 10). The idea of novelty is of course also key to any form of invention. However, the main difference between an invention and an innovation is its application and the **added value** of the latter [8]. In business, the benefit of innovations has traditionally been measured in terms of economic value for the developer. In health care, innovations might generate increased costs, but they can still improve well-being for service users and provide substantial value to individuals and society as a whole.

In addition to the idea of **novelty**, innovation also presents a **discontinuous change**, that is, a break in business-as-usual. In that way, innovation is different from organizational learning or continuous quality improvement [9]. This also means that innovation poses managerial challenges that are different to those created by, say, incremental organizational change or service development [10]. Finally, innovation has been described as both a **process** (the process of innovating) and an **outcome** (innovation/s produced in the process) [11].

Innovations can be classified in different ways and the terminology can be confusing. A basic distinction is that between technological and non-technological innovation [12]. For example, the OECD defines, in the context of industry, science and technology, **technological innovation** as an umbrella term that comprises both **product innovation** (a good or service that is new or significantly improved) and **process innovation** (a new or significantly improved production or delivery method). Non-technological innovations include **organizational innovation**, that is, a new organizational method in business practices, workplace organization or external relations. Others have distinguished political, educational and **social innovation** to differentiate from technological innovation [13]. The study of social innovation in particular has re-emerged as a field on

its own from the 1990s. Broadly defined as seeking ‘new answers to social problems’ [14], the idea of social innovation is becoming increasingly popular within the health field. This is mainly because of its emphasis on the involvement of citizens in service design and delivery [15]. This has found particular traction in low- and middle-income countries [16], but, overall, community involvement in health services has remained challenging.

In the health sector, a wide range of activities are often collectively referred to as innovations, such as new ideas, beliefs, knowledge, practices, programmes and technologies [17]. However, thinking of innovation simply as something that is new may be misleading: something can be new, but it does not necessarily have to be better. Innovations are often assumed to be beneficial, but they may have unintended, and sometimes undesirable, consequences. For example, digital health technologies are widely advocated as a means to strengthen patient empowerment, especially for people with chronic conditions. Yet, those who are least likely to take up digital technologies tend to be most vulnerable in terms of health risks and chronic illness. Such technologies could thus exacerbate social inequalities in health [18].

Keeping this in mind, added value, or **improvement**, is thus a core attribute of health innovations as discussed in this policy brief. We use the definition by Greenhalgh and colleagues [1, 2], which interprets innovation in health service delivery and organization as:

a novel set of behaviours, routines, and ways of working that are discontinuous with previous practice, are directed at improving health outcomes, administrative efficiency, cost effectiveness, or users’ experience and that are implemented by planned and coordinated actions.

A key element of this definition is that the innovation requires those involved to adopt a **novel** set of behaviours, routines and ways of working. The types of innovations that fall within this definition are wide ranging. It considers new technologies, such as digital technologies (e.g. eHealth); new procedures (e.g. minimally invasive surgery); the creation of new roles (e.g. nurse practitioners in primary care); the relocation of services from hospital into the community; the creation of new services (e.g. case management); or the introduction of new models of care (e.g. integrated delivery systems). All of these will have significant impacts on ways of working.

From adoption to scale up: unpacking the ‘implementation processes’

The introduction of service innovation is not a single event but a process that in itself consists of different processes, stages, phases or steps. The categorization, terminology and order of these processes vary widely [19]. The most frequently used terms are **adoption, implementation, sustainability, spread or diffusion, dissemination and scale up**. For ease of reading, we here summarize these under ‘implementation processes’ as an umbrella term, while recognizing that the individual processes are discrete, if overlapping.

Adoption has been broadly defined as the **decision** of an organization or a community to use and implement an innovation, while **implementation** is most frequently understood as the process of **putting to use** or integrating an innovation within a setting [20]. The boundaries between adoption and implementation are fluid, however, with several authors viewing implementation as part of the adoption process (sometimes referred to as post-adoption) [21, 22].

Sustainability emerges from and succeeds implementation. Also called maintenance or routinization, the concept of sustainability describes a process by which the innovation has become an ongoing or routine element in an organization’s or community’s activities [1, 23].

Spread is frequently used interchangeably with diffusion; it generally describes an organic process of the diffusion of an innovation within a setting [1, 24]. **Diffusion** has been more specifically defined as an unplanned, informal and decentralized process by which an innovation is being spread (**passive spread**), as opposed to **dissemination**, which refers to active and planned efforts to persuade target groups to adopt an innovation [1].

Scale up describes a systematic approach used in the context of rolling out a successful local programme to higher levels, or simply any process that aims to expand the coverage of an innovation [24].

Each of these involves a series of processes in themselves, and they rarely follow a linear and predictable sequence. In reality, implementation tends to be a rather “messy, stop–start” process [2], in particular for more complex organizational innovations [25–27]. It is for this reason that many implementation frameworks, which we review in the next section, distinguish **components** or **domains**, rather than stages or phases. This is to emphasize that the processes involved tend to be dynamic, recursive, and interact in ways that are often not knowable. Also, the assumption of a linear, continuous sequence implies that innovations will be implemented and continued more or less as originally planned [28]. Yet, service innovations usually require adaptation to the local context if they are to be successfully introduced, from adoption to scale up, and we come back to this below.

Clearly, some innovations in service organization and delivery are easier to implement, and likely sustained and spread, than others. This depends, mainly, on the level of **complexity** involved. Even a seemingly simple innovation may be difficult or complex to implement, for example, if it raises regulatory issues, or if professional bodies consider its use in clinical care as compromising professional practice, as can be the case with some digital health technologies [29]. This highlights the need to consider the innovation in the context of the implementation processes, the intended users and other stakeholders involved, and the setting within which the innovation is being introduced.

Importantly, what is seen as service innovation in one setting might already constitute routine practice in another one. This is particularly the case for innovations that are being translated from one health system to another one. This is because strategies that are being implemented tend to

reflect the characteristics of individual health systems, such as the relationships between, and responsibilities of, different stakeholders in the regulation, funding and delivery of health care. This issue presents an important challenge for policy-makers and practitioners looking elsewhere for inspiration to innovate service organization and delivery. While it is not possible, in the context of this policy brief, to also examine this important question specifically, many of the lessons learned from the implementation literature that we examine here are relevant for the cross-system translation of innovations, too.

Introducing innovation in service organization and delivery: a brief review of main frameworks and factors that support 'implementation processes'

The study of take up of innovation in health has attracted much academic interest and there are many reviews that have focused on the process of implementation in particular. By 2012, over 60 implementation models or frameworks had been published [30]. These range from models that aim to describe or guide implementation, help understand and explain what influences implementation or evaluate implementation [31]. However, as noted earlier, what is meant by 'implementation' has varied. Many published frameworks focus on the initial phases and consider adoption and implementation together. Yet, a seemingly successful initial implementation of a service innovation, such as the introduction of new roles or integrated care pathways, does not always lead to sustained, longer-term change [32]. Also, it is often not clear why an innovative delivery model is not being adopted in the first place, or indeed, why innovations are being abandoned soon after they have been introduced [29]. More recent work has thus

focused on the processes of sustaining and scaling more specifically, often in the context of more complex innovations that require system-level adoption decisions [24, 25, 33].

Many published models and frameworks build or expand on the seminal work by Greenhalgh et al. on the spread of innovations in service organizations [1, 2]. In the following sections, we briefly review this framework. It helps understand and explain what influences the introduction of innovation in health services and describes a wide range of factors that have been shown to support the successful adoption, implementation and sustainability of service innovations. Other frameworks have specifically focused on the scaling up of innovations in health and they have identified similar factors. This is perhaps not surprising given the close interconnectedness of related research [27]. However, there are also important additional issues to consider for the sustainability and scaling up of innovations, which we examine below.

What enables the adoption, implementation and sustaining of innovation in health service organization and delivery?

Greenhalgh et al. carried out a systematic review of the theoretical and empirical evidence on the spread of innovations in service organizations [1, 2]. Informed by the review, they developed a conceptual model, which identifies a range of **components** of the successful adoption, implementation and sustaining of innovation in service organization and delivery. These are: characteristics of the innovation itself; characteristics of the adopters; organizational antecedents; organizational readiness; wider system context; diffusion and dissemination; and implementation process. The review further identified the key factors that are associated with each of these components (Box 2). Other widely used frameworks include the Consolidated Framework for Implementation Research (CFIR) [34] and the further development of the Promoting

Box 2: Determinants of the adoption, implementation and sustaining of innovation in health service delivery and organization

Characteristics of the innovation	Characteristics of the intended adopters	Organizational antecedents	Organizational readiness	Wider system context	Diffusion and dissemination	Implementation process
Relative advantage	Needs	Structure	Tension for change	Socio-political climate	Social networks	Devolved decision-making
Compatibility	Motivation	Absorptive capacity for new knowledge	Innovation-system fit	Incentives and mandates	Opinion leaders and champions	Dedicated resources
Complexity	Values and goals	Receptive context for change	Assessment of implications	Interorganizational norm-setting and standards	Boundary spanners	Internal communication
Trialability	Skills	Slack resources	Support and advocacy	Environmental stability	Change agents	External collaboration
Observability	Social networks		Dedicated time and resources			Feedback on progress
Reinvention			Capacity to evaluate			

Source: Adapted from [1, 2]

Action on Research Implementation in Health Services (PARIHS) framework [35]. These have described comparable components or domains and they all identify a similar range of factors as influential for the successful adoption and implementation of innovations in health.

When considering the components of the conceptual framework shown in Box 2, it is important to understand that they are closely linked, with multiple (and often unpredictable) interactions between each other and wider contextual factors. These interactions vary between contexts and settings; however, it is the **interaction** between these that determine the success or failure of a given service innovation.

Clearly, all components are relevant. But it is difficult to say, from the outset, how important each of these factors will be in supporting implementation, or whether the same approach will work similarly in a different context. At the same time, Greenhalgh et al. were able to identify a subset of factors that were found to be specifically associated with the successful implementation and subsequent **sustaining** of service innovation. These are:

- an **organizational structure** that is adaptive and flexible, with structures that support devolved decision-making;
- **leadership and management**, involving top management support, articulation of a clear and compelling vision, advocacy of the implementation process and continued commitment;
- the **early and widespread involvement of staff at all levels**; the availability of high-quality training materials and timely on-the-job training; clarity about changes as far as individual roles are concerned;
- availability of **dedicated and ongoing funding** for implementation;
- effective communication across the organization (**intra-organizational communication**); shared narrative ('story');
- **interorganizational networks**, such as learning collaboratives, especially where complex innovations are concerned;
- **feedback** involving accurate and timely information about the implementation process; and
- **adaptation** to the local context.

The importance of these factors for sustaining innovation in health care was confirmed in a more recent systematic review, which specifically focused on sustainability [33]. This emphasized the importance of the availability of dedicated and ongoing funding (as well as infrastructure, staff, and time), ongoing monitoring and feedback of implementation progress, and adaptation to local context (integration with existing programmes and policies). In addition, Lennox et al. highlighted the importance of:

- **demonstrating effectiveness** of the innovation being implemented and sustained, in relation to outcomes and impact; and
- **assessment of health benefits**.

Most often, evaluations of sustainability only focus on the maintenance of programme activities, without taking account of health benefits. This might lead to a situation whereby ineffective or undesirable practices are being continued. An undue focus on maintaining the innovation or programme as originally intended may also hinder its adaptation to local circumstances; yet, as we noted earlier, adaptation to the local context is key to the entire process, from adoption to sustainability.

The importance of adaptation to local context can be illustrated by a series of case studies of the sustainability of service innovation in clinical genetics in the English National Health Service (NHS), which is described in Box 3.

Box 3: Innovation sustainability in challenging health care contexts: an example from the English NHS

Martin et al. conducted a longitudinal study of four organizational innovations in the field of clinical genetics in the English NHS that had sustained post-pilot stage [32]. This identified a number of challenges that the service was facing. One was the shifting of policy priorities over time, away from an emphasis on clinical genetics that had led to the service being implemented in the first place. Instead, other (top-down) priorities started to dominate, along with budgetary constraints that had emerged in the intervening period. This required organizations to refocus their service areas. The shift in priorities was further fuelled by a relative lack of evidence of (cost-)effectiveness of clinical genetics. This was partly because of the challenges of demonstrating evidence of effect in the field of clinical genetics (given the long-term nature of any effect to emerge). Also, the service tended to be small-scale, and a lack of evaluation capacity made it difficult to produce robust, research-grade evidence of effectiveness.

Yet, despite this shift, the cases in question were able to sustain, and this was heavily influenced by their characteristics and the contexts within which they operated. Several key lessons emerged.

- Sustainability was mainly achieved through those leading the service using a range of strategies to make a (business) case for the value of their work.
- Sustaining innovation is an ongoing task that requires continuing work to ensure that services remain alert and responsive to changing policies and priorities, and the expectations of the different stakeholders involved (service users, practitioners, managers).
- There is a need to make the case for 'value' of the innovation and that there are different ways of demonstrating that.
- There is a need to tailor strategies to the specific organizational needs.

Spreading innovation: diffusion, dissemination and scaling up

The various factors that help spread a given innovation can be thought of as lying on a continuum between **pure diffusion** and **active dissemination**. Box 2 lists a set of factors that were found to be effective in the diffusion and dissemination of innovations in health, such as social networks, opinion leaders and champions. Formal dissemination programmes are also important [1, 2], and these tend to be more effective if those developing such programmes:

- take account of potential adopters' needs and perspectives (cost and benefits);
- tailor different strategies to different demographic, structural and cultural features of different subgroups;
- use appropriate messages (style, images, etc.);
- identify and use appropriate communication channels; and
- incorporate rigorous evaluation and monitoring of defined goals and milestones.

Different from diffusion and dissemination, which aim to spread innovations more generally, **scaling up** describes a systematic approach that seeks to roll out a successful local programme to regional or national levels. However, the boundaries are not clear-cut. Research on scaling up health innovations has tended to focus on single or discrete interventions, most often in low- and middle-income countries [24, 36, 37]. There is little guidance on how to scale up innovations addressing more complex and multifaceted challenges in high-income settings [27]. There are several examples of innovative service delivery approaches in high-income countries that have spread beyond the initial pilot or demonstration stages and so benefit wider populations. More often than not, these did not involve systematic scaling up approaches as such. Examples include ParkinsonNet in the Netherlands [38] or the roll-out of a standardized service for the treatment of moderate depression and anxiety in primary health care in the English NHS [39, 40].

Current evidence indicates that many of the factors that influence implementation more broadly (i.e. factors listed in Box 2) are likely to impact on scaling up, too. In addition, Willis et al. identified several factors that facilitate scaling up specifically [27]:

- **adapting funding models** in response to changing resource requirements;
- conducting or commissioning **evaluations** at different time points during scaling up activities;
- developing and implementing **data sharing or feedback processes**;
- identifying and engaging **community champions**; and
- building strong foundations of **political support**.

Understanding the complexity and dynamic nature of introducing innovation into service organization and delivery

As above, the successful introduction of innovation in service delivery crucially depends on the **context** within which service innovation takes place. These contextual factors are often described as 'facilitators' or 'barriers', and they tend to be looked at in isolation. Yet, these contextual factors are part of the normal conditions of practice [26], and, importantly, they interact with each other. Thus, when considering introducing an innovation in service organization and delivery, it is important to take into account that the relationship between the innovation, its implementation and the context within which the innovation is being introduced is dynamic and likely to change over time [41].

Lack of attention to context can have considerable implications for the introduction of innovations in health. This has, for example, been documented for the introduction of digital health technologies. Some commentators highlighted that large-scale policy initiatives to rapidly implement telehealth technologies despite known uncertainties around complexity, costs and benefits "have led to what might be considered inappropriate allocation of finite resources" [42]. Box 4 illustrates some of the problems that have been described in this context.

Box 4: Why the implementation of eHealth systems fails: the importance of context

A 2012 review of reviews of the implementation of eHealth systems found that much work had focused on enablers and barriers at organizational level [43]. Studies generally did not consider the wider social context within which eHealth systems were to be introduced. Thus, questions about the purpose and benefits of such systems and their anticipated value to users were neglected, as were factors promoting or hindering engagement and participation. Moreover, studies rarely examined the likely impacts that eHealth technologies would have for roles and responsibilities for different end-users (staff, patients), and the need to adapt systems to the local context.

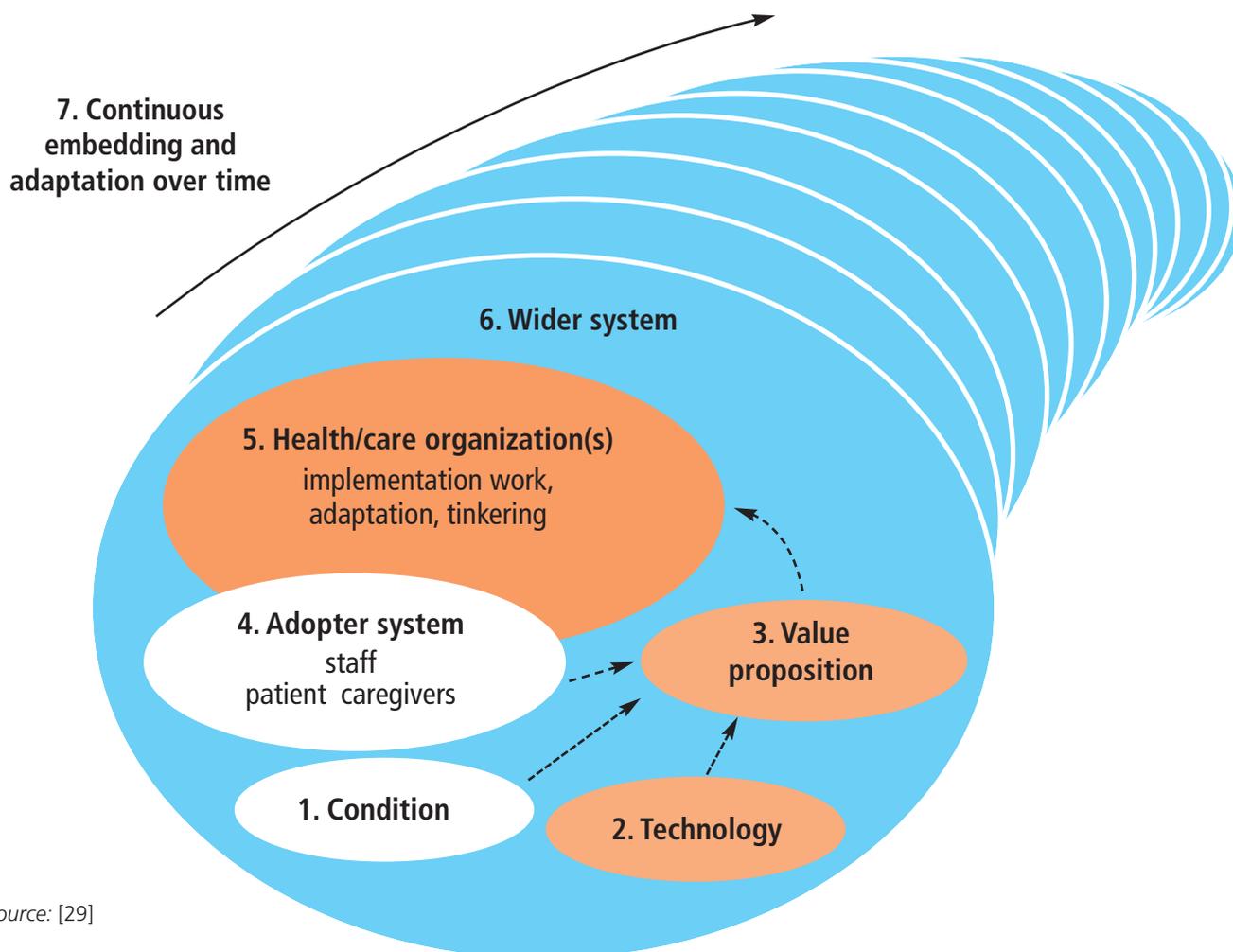
Lack of attention to the wider context within which digital health technologies are being introduced was found to be a major impediment to the implementation of a national digital health innovation programme in the United Kingdom [44]. The programme aimed to stimulate a consumer market for person-centred digital technologies, which involved a wide range of products and services (mobile applications (apps), personal health records, telecare, telehealth, wearable activity trackers, etc.) to enable preventive care, self-care, and independent living at scale. Capturing the experiences of a wide range of stakeholders and over time, Lennon et al. identified several barriers to the routinization of technologies into daily practice at all tiers of the system [44]. These included: lack of suitable information technology infrastructure, uncertainty around information governance, lack of incentives to prioritize interoperability, lack of precedence on accountability within the commercial sector, and a market perceived as difficult to navigate.

Clearly, context means different things to different people in different settings. Pfadenhauer et al. proposed the following definition [41]:

Context reflects a set of characteristics and circumstances that consist of active and unique factors, within which the implementation is embedded. As such, context is not a backdrop for implementation, but interacts, influences, modifies and facilitates or constrains the intervention and its implementation. Context is usually considered in relation to an intervention, with which it actively interacts. It is an overarching concept, comprising not only a physical location but also roles, interactions and relationships at multiple levels.

This definition reinforces the dynamic nature of innovation implementation, which implementers should consider. But how to do this in practice remains a challenge. This challenge is explicitly addressed in recent work by Greenhalgh and colleagues [29]. It builds on their earlier work and specifically considers the critical role of the wider context into which innovations must become embedded. Although focusing on the introduction of digital health

Figure 1: The NASSS framework for considering influences on the adoption, nonadoption, abandonment, spread, scale up and sustainability of patient-facing technologies



Source: [29]

technologies, the resultant Nonadoption, Abandonment, Scale-up, Spread and Sustainability (NASSS) framework can also be applied to service innovations more broadly (reproduced in Figure 1).

The framework identifies seven domains that influence the adoption, nonadoption, abandonment, spread, scale up and sustainability of technology-based innovations. It considers

different levels of complexity in each of the domains identified: from **simple** (straightforward, predictable, few components) to **complicated** (multiple interacting components or issues), to **complex** (dynamic, unpredictable, not easily broken down into simpler components). Box 5 illustrates this continuum for the seven domains of the framework.

Box 5: Domains of the NASSS framework

Domain

1. Condition

- Nature of condition/illness
- Comorbidities
- Socio-cultural factors

2. Technology

- Material properties
- Knowledge needed to use
- Knowledge generated
- Supply model
- Who owns the IP?

3. Value proposition

- Supply-side value (developer)
- Demand-side value (patient)

4. Intended adopters

- Staff
- Patients
- Carers

5. Organization

- Capacity to innovate
- Readiness for change
- Nature of adoption/funding decision
- Extent of change needed to organizational routines
- Work needed to implement and evaluate the change

6. Wider system

- Political/policy context
- Regulatory/legal issues
- Professional bodies
- Socio-cultural context
- Inter-organizational networking

7. Embedding and adaptation over time

- Scope for adaptation
- Organizational resilience

Simple, for example:

Well characterized, clear diagnostic/ treatment pathway (e.g. sprained ankle)

Dependable, cheap, substitutable (e.g. telephone)

Robust business case, demonstrable benefits as shown by HTA

Intended users (clinicians, carers, patients) are willing to use technology and easy to train

High capacity to innovate, keen to change, slack resources available, capacity to monitor and evaluate

Clear policy push with relevant levers and incentives, regulatory framework

Technology and care pathway are adaptable and sustainable, organization is flexible and resilient to external setbacks

Complex, for example:

Unpredictable and not amenable to management by algorithm (e.g. multimorbidity in vulnerable group)

Requires interoperability across different organizations, regulatory challenges (e.g. information governance)

Business case rests on limited experimental data, HTA not available

Intended users are not willing or capable to use technology; resistance

Lack of agreements and partnerships between organizations, lack of budget and capacity

Top-down without funding, inconsistent policies at different tiers, lack of support from professional groups

Technology or service model are implemented mechanically, organization lacks the capacity to respond flexibly to external pressure and change

Source: Adapted from [29]

Introducing service innovation in service organization and delivery: learning from experiences in Europe

The section above has given a brief overview of key frameworks and factors that are associated with the successful introduction of innovation in health service organization and delivery. We have seen that several key factors are relevant along the innovation continuum, from adoption and implementation to sustaining, spread and scaling, although their relative importance varies across innovations, organizations, settings, contexts and over time. They can be summarized as follows:

- leadership and management at different tiers that are supportive of and committed to change;
- early and widespread stakeholder involvement, including staff and service users;

- dedicated and ongoing resources including funding, staff, infrastructure and time;
- effective communication across the organization (and, where relevant, between organizations);
- ongoing monitoring and timely feedback about progress;
- adaptation of the innovation to the local context and (where relevant) integration with existing programmes and policies; and
- evaluation and demonstration of (cost-)effectiveness.

The paragraphs that follow illustrate these key factors with selected examples of service innovations in European countries, followed by an assessment of the implications for policy. We mainly draw on recent work that has examined innovative care models that sought to improve the coordination of care for people with chronic conditions in Europe [3, 45]. While the selection of examples should illustrate diversity as much as is possible, emphasis has been

given to three examples of integrated care models in Denmark, Germany and the Netherlands that have emerged from local pilot or research projects, sustained beyond the pilot or project phase and informed novel care approaches across the country more broadly. Background information and illustrations of how the key factors listed above applied to these models are summarized in Box 6.

The available evidence does not allow us to explore the nature of interactions between different factors as such, or the relative importance of different factors in different

settings and contexts and over time. This will likely differ and reflect the starting point and the complexity of the service innovation to be implemented. The distinction between individual 'success' factors is often not clear-cut, and there will be overlap and mutual dependencies, although, as noted, it will be difficult to characterize the nature of these. Still, the evidence that we review here provides useful insights into some of the key issues those seeking to introduce service innovation that is sustainable and, potentially, at scale, may wish to consider.

Box 6: Implementing, sustaining and spreading integrated care approaches: examples from Denmark, Germany and the Netherlands

	'Integrated effort for people living with chronic diseases' (SIKS) project, Copenhagen, Denmark	'Gesundes Kinzigtal' network, Kinzigtal valley, Germany	'Zio' care group, Maastricht region, the Netherlands
Description*	Set up as a research project in the Østerbro district in Copenhagen (2005-2007) involving implementation of rehabilitation programmes across primary and specialist care providers for people with type 2 diabetes, chronic obstructive pulmonary disease (COPD), heart disease or with balance problems following falls; Financed by the Ministry of Interior and Health	Set up in 2005 as a pilot project on the initiative of a local physicians' network and a health care management company involving the development of an integrated health care delivery system for the local population; Financed by two regional statutory health insurance funds	Set up in 1996 as a pilot project by the Maastricht University Medical Centre and development into diabetes disease management programme using specialized diabetes nurses; subsequent development into primary care group Zio, which covers a broader spectrum of conditions; Financed through statutory health insurance using bundled payments for defined chronic conditions
Leadership and management	Setting up of governance mechanisms to ensure adherence to service requirements specific to the individual innovation Establishment of a dedicated leadership and management structure with the rehabilitation programmes forming 'agreements' within and between organizations	Conclusion of formal contracts between participating providers or provider organizations, setting out performance agreements; governance arrangements also included the use of sanctions for breaching processes and procedures	
Stakeholder involvement	Engagement of frontline staff, most often in the context of developing structures, guidelines and indicators in order to secure 'buy-in' from participating staff and organizations		
Dedicated and ongoing resources	Establishment of a design and implementation team to guide implementation of the respective project; ability to draw on start-up funding to strengthen capabilities and readiness. However, this was not necessarily seen as a key factor that facilitated implementation.		
Effective communication, ongoing monitoring and feedback	Setting up dedicated mechanisms to collect data systematically, to assess performance and identify opportunities for improving access, quality, efficiency and patient experience	Systematic efforts to measure costs and identify problems to be fed back to participating organizations	
Adaptation to the local context	Building on local relationships and local capacity, allowing to focus on what is relevant and what works locally		
Evaluation and demonstration of (cost-) effectiveness	Evaluations demonstrated evidence of improvements in a number of process and outcome measures, along with selected utilization measures. For example: Demonstrated impact on the number of hospital admissions, bed days, and outpatient visits over a two year period among people with COPD	Demonstrated impacts on mortality and cost savings	Demonstrated impact on the cost-effective delivery of integrated diabetes care and clinically relevant improvements among patients with poorly controlled diabetes

Sources: [46-53]

Notes: *Please see Box A2 in the Appendix for more details.

Leadership and management

Support and advocacy, coupled with leadership and management at different tiers that are supportive of and committed to change, are core to successful implementation [49]. Appropriate governance and management mechanisms are the key component of effective leadership and management. Among these, the establishment of formal structures may be essential, such as:

- policy framework, including a strategy or mission statement;
- detailed plan for or design of the service innovation to be implemented; and
- dedicated design and implementation team (alongside start-up funding) to strengthen capabilities and readiness.

Equally or more important perhaps will be the development of accountability agreements, in particular where multiple collaborating partners and organizations are involved. Such agreements can be formal or not. For example, of the three integrated care models described in Box 6, all put in place governance mechanisms to ensure adherence to service requirements specific to the individual innovation. In the case of *Gesundes Kinzigtal* and the *Zio* care group in Maastricht, this involved the conclusion of formal contracts between participating providers or provider organizations. Such agreements do not necessarily have to be formalized however, as the Danish SIKS project demonstrates. Important here was the setting up of a dedicated leadership and management structure to oversee the programme across participating organizations [49].

Leadership and management structures also play an important role in providing continuing support, in particular where innovative service models involve a range of partners across organizations. Support may include acting on behalf of the interests of the participating organizations in negotiating contracts with funders, providing access to provider education, or the development of common protocols or guidelines. Such support may be vital, in particular where participating organizations remain separate entities [47].

Stakeholder involvement

While effective leadership, governance and management structures 'at the top' are important for establishing the appropriate supportive environment, it is equally crucial to ensure that those who are affected by the innovation, including staff and service users, are engaged at an early stage. Systematic engagement may be particularly pertinent to get physicians on board, as they tended to be resistant to proposed changes in all three cases described in Box 6. The need for the active involvement of clinicians is widely recognized to be critical to successful implementation and sustainability of service innovation [54], given the large degree of control they have in health care organizations such as primary care practices and hospitals [55]. In this context it is important to understand who benefits from the innovation and how, and who might resist and why.

Dedicated and ongoing resources

Several countries have, directly or indirectly, set aside dedicated resources to support the development and implementation of innovative care models seeking to achieve better service integration, such as through targeted payments or the use of start-up grants [3, 5, 45]. Frequently there has been an expectation that such models would become self-sustaining, and they have often had to do so within a changing policy framework, which may mean discontinuation of dedicated financial support. Yet, as we know from efforts around service integration and transformation more generally, for any such initiative to be successful in the long-term, this requires sustained investment in staff and support systems, and flexibility to respond to needs that emerge during implementation [56].

Dedicated resources not only include financial resources; infrastructure, staff and time are equally important. Yet, time, as a key resource, coupled with strategic investment in staff and capacity-building, often tends to be underestimated or even overlooked. Allowing sufficient time to enable organizations and services to learn to work in new ways is essential for the implementation and sustainability of innovative service approaches. Such investment is particularly important at the early stages of introducing service innovation to establish some of the supporting infrastructure. For example, in the case of the SIKS project and the *Gesundes Kinzigtal*, involving key stakeholders in guideline development was seen to be essential, yet, it took time to get them on board. Likewise, training staff to deliver novel services requires time as does the understanding of, and investment in building the capacity of different participating organizations. Typically, there is also the need to implement and adapt information technology and the skills for using new technologies. This again takes time to get off the ground, and, importantly, requires continued investment [47].

Effective communication, ongoing monitoring and feedback

Effective communication, as well as ongoing monitoring and feedback, are vital to any service innovation, particularly where complex innovations are concerned that may involve a wide range of diverse organizations. In Box 6 we highlight how all three organizations have set up mechanisms for the systematic collection of data on progress to feedback to participating partners, but also as a way of identifying problems and so providing opportunity to 'correct course' should issues arise. Lack of investment in effective communication may result in variable understanding and awareness of the service innovation. In the case of the SIKS project in Denmark, this was thought to have led to suboptimal implementation, and, possibly performance, of the service innovation [51].

Adaptation to the local context

One of the main lessons from the implementation literature is the need to allow for service innovations to be adapted to the local context, which may require integration with

existing programmes and policies for it to be sustainable and improve the chances of successful spread and scale up. This also means that organizations will need to be flexible to allow for the adaptation of the service innovation to their needs.

The experience of the SIKS project in Denmark highlights how the wider spread of innovative service models requires some modification to enable take up: it was initially set up as a research project in one district in Copenhagen, which led to the establishment of a new health care centre; after completion of the project, similar centres were established in other districts of Copenhagen and, eventually, across Denmark. The evolution of the Dutch primary care groups provides another example, as we explain further in Box 7.

Box 7: The spread of primary care groups in the Netherlands

As described in Box 6, the Zio care group in Maastricht evolved from a local programme, the Matador Disease Management Programme in Maastricht [57]. It was developed by Maastricht University, the regional general practitioners (GPs) association, a health insurer and the Maastricht branch of the Dutch Diabetes Association. It was established in 2001. Innovative components of the Matador model included:

- a team approach with the diabetes nurse linking primary and secondary care and taking on some of the tasks previously performed by doctors only; and
- the use of protocols setting out the primary responsibilities for three subgroups of patients to a medical specialist (highly complex), a diabetes nurse (intermediate or stable) or the GP and a practice supporter (low complex) and support of self-management.

The Matador programme was extensively evaluated [58] and considered to be successful. Key attributes included its integration of various levels of care, strong leadership, a shared vision about care delivery, and communication and transparency regarding the programme's objectives. The programme was described by the main funder of health research (Netherlands Organization for Health Research and Development) as 'prime example' for well developed disease management for diabetes, committing to the further dissemination of the so-called 'Maastricht Model' across the Netherlands [57].

However, for the model to be acceptable among GPs across the Netherlands more widely, it was redesigned. The GP, and primary care in general, was tasked with the primary responsibility for the subgroup of patients with intermediate complex care needs. Further adaptations included GPs employing practice supporters, who may or may not have a nursing background. This implied a different role for the diabetes nurse, who became a consultant for primary care and a caregiver for patients with highly complex care needs. The wider uptake of the programme was further stimulated and facilitated by supportive measures, such as the introduction of the bundled payment system for care groups from 2006 [52].

The example of the Dutch primary care groups also illustrates two factors that are associated with the successful scaling up of innovation as discussed above, namely **adapting funding models** and **building strong foundations of political support** [27]. As described in Box 7, the spread of primary care groups across the Netherlands was facilitated, to a great extent, by a change in the funding model which involved the use of 'bundled payment'

schemes for a defined package of chronic care. Equally important perhaps was political endorsement of the care group approach to chronic illness care by the government [57].

Evaluation and demonstration of (cost-)effectiveness

Evidence of effectiveness is widely regarded as vital to the sustainability and roll-out of innovative service models. All three integrated care models described in Box 6 were subject to a series of evaluations that provided evidence of impact on a range of process and outcome measures. The need for systematic evaluation has been highlighted to be of particular importance to help understand the differential impacts of service innovations and 'what works for whom'. Lack of evidence of improved outcomes (however conceptualized) of a given innovation might simply reflect that the service innovation was not suitable to lead to health improvement in the first place [59]. Likewise, where evidence finds that a given service innovation improves outcomes for a subgroup of service users only, this might indicate that the innovation was suboptimal or not sufficiently targeted at those who would benefit most.

What now?

Much progress has been made in developing a better understanding of how to ensure that innovation in health service delivery and organization is implemented, sustained and spread. However, more needs to be done to achieve lasting, large-scale and effective transformation into people-centred health systems, which we summarize here.

Is the innovation worth introducing? Establish the value proposition and assess the intended and unintended consequences of emergent innovations

Those considering service innovations need to systematically reflect upon whether a given innovation, be it a service or a technology, is actually worth introducing (the value proposition). This requires clear understanding of the underlying 'problem' that the innovation is intended to solve, and how the new service is meant to solve this. Due attention needs to be given to who will benefit and how, and the likely unintended consequences, in particular, as these relate to access, uptake and use of the new service or technology. For example, the introduction of digital health technologies is likely to exacerbate existing health inequalities if strategies fail to consider the persistent digital divide in the population. One further example may also be illustrative of this issue: in times of rising demand on primary care and the challenges many countries are facing in recruiting GPs (especially in more rural areas), there is increasing interest in the use of alternatives to face-to-face consultations to help reduce pressures, such as via the telephone or, more recently, online consultations. However, emerging evidence suggests that at its best, such approaches are unlikely to reduce demand or save costs [60], and, at its worst, they may compromise patient safety [61] through a tendency to overprescribe, particularly antibiotics and analgesics.

This does not mean that such innovations should not be pursued at all. It does however highlight the need for careful assessment of their likely impacts, in particular, whether they will benefit the population more broadly, and what changes are needed to embed such services into routine care. There is thus a need for **responsible innovation** that explores the impacts and implications, both intended and unintended, of emergent innovations (e.g. potential to increase inequities by excluding more marginalized populations from accessing the innovation), and to ensure their benefits are widely distributed and shared, are sustainable and meet societies' needs more broadly [62].

Innovation planning, from adoption to sustaining, spreading and, potentially, scaling must take account of the dynamic nature of the processes involved

In this brief we have identified a range of factors that are key in supporting the successful adoption and implementation, sustaining, spread and scaling of innovation in health service organization and delivery. They include: leadership, management and widespread stakeholder involvement to ensure advocacy, support and buy-in; effective communication, ongoing monitoring, feedback and evaluation; and dedicated and continuing resources to enable these functions and processes. Importantly, for a service innovation to sustain and spread, adaptation to the local context and its integration with existing programmes and policies are vital.

These factors do not exist or act in isolation; instead, they interact with each other, with the innovation and with the wider context within which the innovation is being introduced. The nature of these interactions varies between contexts and settings, often in unpredictable and typically complex ways. This means that the successful introduction of innovation requires a 'package of interventions, rather than a single new approach or model'[37] (p. 244) as it often involves significant change in the way health services and systems function. It must take account of the political, cultural, institutional and other contexts, and that time will be required to enable organizations and services to (learn to) function in new ways.

Continued evaluation is central to success

Continued evaluation of service innovations is fundamental to enable sustainable implementation and wider spread or scale up. The failure to evaluate innovation may lead to 'misattribution of effects' and, potentially, the wider introduction of 'technologies, practices and ways of working without proven benefits over existing alternatives' [42] (p. 572). There are likely to be trade-offs between what evidence is desirable and what is available. This is a particular challenge for smaller scale innovations, for which it is difficult to demonstrate robust data on impact on outcomes, let alone cost-effectiveness. It may therefore be necessary to frame the same evidence differently to convince different stakeholders. Such reframing is especially important in times of resource constraints, where perspectives on evidence may emphasize cost savings or efficiencies [63], which may be challenging to prove for more complex innovations [64, 65].

Systematically consider the perspectives and priorities of the public in service innovation

One key stakeholder that appears to be missing frequently in considerations about the adoption, implementation, sustainability, spread and scale of innovation in service organization and delivery is the voice of the ultimate end-user of the innovation – namely patients, their carers and the wider community. Explicit consideration of service users' perspectives and priorities in service innovation, and their participation in the process of implementation is increasingly recognized as essential for the successful introduction and sustainability of innovation in service organization and delivery [54]. Due consideration of the 'public voice', as service users, carers, members of the community or taxpayers, will become ever more important if countries are serious about their health systems becoming more person- or people-centred.

More research evidence is needed on the key success factors for introducing innovation

The factors described in this brief represent those that have been identified in the published literature [2]. There is urgent need for longitudinal studies that systematically evaluate the introduction of service innovation over time to better understand the impact of those factors that have so far received less attention [29]. Further, and more fundamental perhaps, mere knowledge of the key success factors for introducing innovation into service delivery as described is not sufficient to ensure that it will be implemented and sustained. There is a need to more systematically assess what strategies are likely to work best in what context and under what conditions, keeping the complexities involved in mind. This requires a good understanding of the 'politics' surrounding the various processes, and in particular of the power relationships between the various stakeholders involved. Indeed, local processes, as well as professional and 'microsystem' considerations, play a significant role in adoption and implementation. This also means that a single, overarching strategy that seeks to implement change at scale is unlikely to be effective if local idiosyncrasies are not taken into account [66].

Those considering service innovations should also be aware of competing or complementary innovations – a significant, albeit frequently overlooked, and even less studied, contextual factor [67, 68]. Competing priorities may lead to disengagement, fatigue and uncertainty among stakeholders. They may also cause additional costs through the need to redesign and delay implementation, and this should be considered.

Appendix

Box A1: Methodological approach to this policy brief

The original aim of this work was to carry out a rapid review of studies evaluating the (lack of) spread, sustainability and/or scale up of innovations in service delivery in selected topic areas in Europe. However, various database search strategies only yielded a small number of relevant titles. This indicates that published studies have focused, mainly, on the early implementation stages only. Also, key terms and concepts around the adoption, implementation, spread, sustainability and/or scale up of innovations in health care tend to be defined and interpreted differently, and they are at times used interchangeably. We therefore examined first some of the underlying conceptual literature to clarify models and frameworks and in a second step illustrated identified lessons with examples of service innovations in European countries.

To identify the conceptual literature, we used the seminal review by Greenhalgh et al. of the diffusion of innovations in service organizations as a starting point [2]. We tracked citations of that review within PubMed (n=957 as at 5 March 2018) and screened these up to studies that had been published since 2013 in the first instance. This identified a number of key papers [19, 22, 24-27, 29, 33, 35, 36, 41, 69-72]. We screened their reference lists as well as papers that had cited them subsequently (using the PubMed 'cited by' function and/or access metrics from the relevant journal's website, as appropriate). This search strategy proved to be effective in identifying relevant work, including studies that had been published before 2013. This approach of snowballing and citation tracking is recommended for reviews of complex evidence [73].

Examples of service innovations in Europe were sourced, mainly, using informal approaches. This included browsing for potentially relevant grey literature as well as the author's own knowledge of evidence in the field through her own work and that of professional networks. We selectively chose some of these to illustrate the key factors that were identified to support innovation in service organization and delivery.

Box A2: Implementing, sustaining and spreading integrated care approaches: examples from Denmark, Germany and the Netherlands

	'Integrated effort for people living with chronic diseases' (SIKS) project, Copenhagen, Denmark	'Gesundes Kinzigtal' network, Kinzigtal valley, Germany	'Zio' care group, Maastricht region, the Netherlands
General information:	Set up as a research project in the Østerbro district in Copenhagen (2005-2007) and funded by the Ministry of Interior and Health; Interventions implemented as part of the project informed the development of similar integrated care models elsewhere in the country as well as policy development for coordinated care approaches in Denmark more widely	Set up in 2005 as a pilot project on the initiative of a local physicians' network and a health care management company; Financed by two regional statutory health insurance funds	Set up in 1996 as a pilot project by the Maastricht University Medical Centre; Financed through statutory health insurance using bundled payments for defined chronic conditions (asthma, COPD, cardiovascular diseases, mental health problems, and frail older people)
Focus:	Implementation of rehabilitation programmes for people with type 2 diabetes, COPD, heart disease or with balance problems following falls	Development of an integrated health care delivery system for the local population	Initially diabetes type 2 using specialized diabetes nurses; subsequent development into primary care group Zio, which covers a broader spectrum of conditions
Target population:	Resident population of the Østerbro district of Copenhagen; around 700 patients received services over the duration of the project	Entire population in the region; around one-third of the eligible population has signed up (9,700 by 2016)	People with chronic conditions in the Maastricht region (some 25,000 enrolled with Zio in 2016)
Partners:	Bispebjerg University Hospital, specialists, (nurses, physiotherapists, dieticians), one community health care centre (nurses, physiotherapists, dietician), and 52 GPs in Copenhagen	About 90 core partners, mostly office-based physicians, along with hospitals, nursing homes and home care services, as well as other partners such as gyms, pharmacies, etc.	81 GPs and primary care professionals working in 55 general practices, 1 hospital, allied primary health care professionals

Sources: [47,49,51,53]

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Health Systems for Prosperity and Solidarity Series

This policy brief was written for the WHO European high-level meeting on Health systems for prosperity and solidarity: leaving no one behind, held in Tallinn, Estonia on 13-14 June 2018, specifically as a support to the related sessions on harnessing innovations and systems to meet people’s needs.

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Hans Kluge (Division of Health Systems and Public Health at WHO Regional Office for Europe) and **Josep Figueras** (European Observatory on Health Systems and Policies) acted as series editors for these policy briefs commissioned and published in time for the Tallinn 2018 conference on “Health Systems for Prosperity and Solidarity”.

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