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Innovation Networks for Scaling Active and Healthy Ageing IN-4-AHA

Overview of evaluation toolkits

in4aha
Empowering the innovation for active and healthy ageing

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Innovation Networks for Active and Healthy Ageing (IN-4-AHA) is a EU-funded Coordination and Support Action (CSA) that contributes to the cross-border scale-up of tested and ready-to-use applications in health and social care. The project will bring together both the support and the demand sides as well as the end-users, engage with local and regional ecosystems, stakeholder groups and organisations. The *main outcome* of this cooperation is an *innovation scale-up model* that is validated by stakeholders and complemented by a *clear implementation roadmap,* an *innovation impact evaluation toolkit,* and a *strategy for long-term investments.*

in4aha
Empowering the innovation
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Contents

Acronyms and abbreviations

AHA	Active and healthy ageing
AI	Artificial Intelligence
CFIR	Consolidated Framework for Implementation Research
DAM	Decision Analytical Modelling
EIP on AHA	European Innovation Partnership on Active and Healthy Ageing
GPS	Global positioning system
HCD	Human-centred design
ICDs	Implantable cardiac defibrillators
ICT	Information and Communications Technology
IN-4-AHA	Innovation Network for Active and Healthy Ageing
IP	Internet Protocol
IT	Information Technology
M&E	Monitoring and evaluation
MAFEIP	Monitoring and Assessment Framework for the European Innovation Partnership on Active and Healthy Ageing
MAST	Model for Assessment of Telemedicine
NASSS	Non-adoption, Abandonment, Scale-up, Spread, Sustainability Framework
NHS	National Health Services (United Kingdom)
PARIHS	Promoting Action on Research Implementation in Health Services
PCC	Person-centred care
PD	Parkinson's Disease
PD	Participatory design
PM	Pacemaker
RCT	Randomized controlled trial
RH	RENEWING HEALTH project
SMEs	Small and medium-sized enterprises
TRL	Technology readiness level

Introduction

The number of older people worldwide is constantly rising, creating a large-scale shift in demographics. It is necessary to find ways to meet people's demands to ensure them a happy, active, and healthy lifestyle while ageing. Ageing populations will lead to the urgent need to expand access to health and social care services and innovative solutions. Innovative solutions are necessary to ensure sustainable health and social care systems and to create services and products that meet people's needs to create a more human-centred and cohesive community.

The field of EIP on AHA has been supported for a long time by the European Commission to promote scaling up innovative digital solutions. This support is done by conducting research and providing funding under Horizon 2020, with previous programmes and contributions from different partnerships like EIP on AHA. While several different measures were set out for the use of digital tools which are relevant for AHA, the main challenge is to facilitate contributions from all stakeholders to scale-up their innovative solutions for AHA. The aim is to create tested and ready-to use solutions in the field of health and social care that can be scaled across borders.

The project involves different stakeholders – end-users of the solutions, support and demand sides, local and regional ecosystems, and organizations. Through involvement and other project activities, AHA systems, innovative solutions, and policy recommendations in the field of health and social care will be further developed.

In this report, we aim to introduce toolkits being used to assess innovation in AHA. A theoretical context of toolkits, evaluation frameworks, and their creation is given with a special focus on HCD since it is very encompassing, and there has been a surge of interest and implementation of HCD. Additionally, an overview of a survey is given, aiming to map out current practices in measuring the impact of innovative solutions. The survey was conducted among innovative solution providers, and a total of 40 different stakeholders participated.

1. Overview of evaluation principles used in toolkits

1.1 Innovation concept

The terms innovation or solution are widely used but in multiple ways. Often seen as a “miracle cure for many problems” (Godin, 2008), it remains unclear what exactly is meant by this in different contexts. Rogers defined innovation as “an idea, practice, or object that an individual or other adoption entity perceives as new” (Rogers, 2003). The idea of novelty is, of course, also the key to any form of the invention. However, the main difference between invention and innovation is its application and the added value of the latter (Witell et al., 2016). In healthcare, innovation can increase costs while improving service users’ well-being and provide significant value to individuals and society.

In addition to the idea of novelty, innovation also presents a continuous change, a breakthrough in conventional business. In this way, innovation is different from organizational learning or continuous quality improvement (Toivonen & Tuominen, 2009). It also means that innovation presents management challenges that differ from gradual organizational change or service development (Osborne & Brown, 2011). Finally, innovation is described as both a process (innovation process) and a result or outcome (innovation(s) produced in a process) (Osborne, 1998).

Various activities are often collectively referred to as innovations in the health sector, such as new ideas, beliefs, knowledge, practices, programs, and technologies. (Dearing, 2008). Although, thinking about innovation simply as new can be misleading: something can be new, but it does not have to be better. Innovations are often considered useful but can have unintended, and sometimes undesirable, consequences. For example, digital health technologies are widely supported to empower patients, especially those with chronic diseases. However, those who use digital technology the least are the most vulnerable to health risks and chronic diseases. Such technologies can therefore exacerbate (Latulippe et al., 2017) or even reduce social inequalities in health.

1.2 From adoption to scaling

The introduction of service innovation is not a single event but a procedure consisting of different processes, steps, or stages. The categorization, terminology, and order of these processes can be very different (Moullin et al., 2015). The most used terms are deployment, implementation, sustainability, proliferation or dissemination, and expansion. Adoption is broadly defined as an organization’s or community's decision to take and implement innovations while implementing the most fitting. This means to process or integrate any innovations in the body (Rabin et al., 2008). Boundaries between adoption and implementation are blurry, but implementation is often viewed as part of the adoption process by a number of authors (sometimes called post-adoption) (Wisdom et al., 2014).

However, scaling is necessary to ensure sustainability. Sustainability stems from implementation and its success. The concept of sustainability, also called maintenance or routine, describes the process by which innovation has become a continuous or routine element in the activities of an organization or a community (Fleiszer et al., 2015). In the innovation processes are also described dissemination and diffusion. Dissemination is often substituted by diffusion; it generally describes an organic process for disseminating innovation in settings. Diffusion is more specifically defined as an unplanned, informal, and decentralized process of disseminating innovation (passive dissemination), as opposed to dissemination, which refers to active and planned efforts to persuade target groups to use innovation (Nolte, 2018). However, in addition to disseminating innovation, further work is needed to scaling innovation.

Scaling describes a systematic approach used in the context of taking a successful local programme to higher levels or simply any process that aims to expand the coverage of an innovation (Fleiszer et al., 2015). Scaling public health projects and initiatives is quite common, as is pilot testing innovations and extending their scope afterwards. Sometimes, innovative approaches are implemented on a small scale due to budget restrictions. However, the following are the different types of scaling that can be used to develop innovation:

- Diversification/functional scaling-up - expands programme breadth (adding additional services);
- Political scaling-up - expands political support (building a supportive network);
- Organizational/institutional scaling-up - has a diversifying/stabilizing funding base, builds strategic alliances with other organizations, and develops the technical and management capacity of an in-country agency to sustain programmatic efforts, policy, or legal changes to overcome national or subnational barriers, and to support sustainability.

Quantitative scaling, along with increasing impact, is often linked with other types of scaling (WHO, 2016).

Health promotion projects are often developed, organized, expanded, and repeated at the local level. A successful pilot project at a local level can stimulate the repetition of the project in other local contexts. However, sustainable enlargement and implementation at a regional level and/or beyond national borders may require political and legislative changes at higher levels. This means that increasing processes often go through different political and administrative levels - political and organizational approval is important.

Some innovations in the organization and delivery of services are easier to implement and are more likely to persist and spread than others. This mainly depends on the complexity of the matter. Even a seemingly simple innovation can be complex or difficult to implement, for example, if it raises regulatory issues or if professional organizations consider its use to be detrimental to clinical practice, as may be the case with some digital health technologies (Greenhalgh et al., 2017). This highlights the need to consider the innovative solution particularly in the context of the implementation processes, especially when different users and other stakeholders are involved, and how the innovation is to be used.

Importantly, service innovation may be recent in one environment but already be a common practice in another. This is especially true for innovations that are translated from one healthcare system to another. This is because the strategies implemented usually reflect the characteristics of individual health systems, such as the relationships and responsibilities between different stakeholders in the regulation, financing, and delivery of health care. This issue is a major challenge for policymakers and practitioners looking elsewhere for inspiration to innovate in service organization and delivery. Although it is not possible to specifically examine this important issue in the context of this policy brief, many of the lessons learned from the applied literature examined here are also relevant to the cross-system translation of innovations (Nolte, 2018).

All these terms in themselves involve a series of processes and rarely follow a linear and predictable sequence. Furthermore, organizational innovation is closer to a complex process rather than a "messy, stop-start" process (Chambers et al., 2013; May et al., 2016; Willis et al., 2016). For this reason, many of the implementation frameworks that we will review in the next chapter distinguish between components or domains rather than steps or stages. It aims to emphasize that the processes involved tend to be dynamic, recursive, and communicate in often unknown ways.

1.2.1. Introducing innovation in organizations providing services in health and care

The studies of innovation adoption in health care have attracted much academic interest, and there are many reviews that have focused on the implementation process. For example, by 2012, more than 60 implementation models or frameworks had been published (Tabak et al., 2012). These range from models that aim to describe or guide implementation, help understand and explain what influences implementation, to evaluating implementation (Nilsen, 2015). Many published frameworks focus on the initial phases and consider adoption and implementation together. However, a seemingly successful initial implementation of a service innovation, such as introducing new roles or integrated care pathways, does not always lead to sustained, long-term change (Martin et al., 2012). Also, it is often unclear why an innovative delivery model is not being adopted in the first place or why innovations are being abandoned soon after they have been introduced (Greenhalgh et al., 2017). 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 (Lennox et al., 2018).

Many published models and frameworks build or expand on the seminal work by Greenhalgh *et al*. on the spread of innovations in service organizations (Nolte, 2018). It helps to understand and to 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 innovations. Other frameworks have specifically focused on scaling innovations in health, and they have identified similar factors. This is perhaps not surprising, given the close interconnectedness of related research (Willis et al., 2016). However, there are also important additional issues to consider for the sustainability and scaling of innovations, which we examine below.

Greenhalgh *et al*. carried out a systematic review of the theoretical and empirical evidence on the spread of innovations in service-providing organizations (Greenhalgh & Abimbola, 2019). 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 the 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 the implementation process. The review further identified the closely related, broad contextual key factors associated with each of these components (Table 1). Other widely used frameworks include the CFIR (Damschroder et al., 2009) and the further development of the PARIHS framework (Harvey & Kitson, 2015). 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.

TABLE 1. 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 Compatibility Complexity Trialability Observability Reinvention	Needs Motivation Values and goals Skills Social networks	Structure Absorptive capacity for new knowledge Receptive context for change Slack resources	Tension for change Innovation system fit Assessment of implications Support and advocacy Dedicated time and resources Capacity to evaluate	Socio-political climate Incentives and mandates Interorganizational standard setting and standards Environmental stability	Social networks Opinion leaders and champions Boundary spanners Change agents	Devolved decision-making Dedicated resources Internal communication External collaboration Feedback on progress

All components are relevant, however from the outset, it is difficult to say how important each of these factors is in supporting implementation or whether the same approach works similarly in different contexts. At the same time, Greenhalgh *et al*. (2017) identified a subset of factors that were specifically related to the successful implementation and subsequent support 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 is concerned;
- availability of dedicated and ongoing funding for implementation;
- effective communication across the organization (intraorganizational communication), shared narrative;
- 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 (Lennox et al., 2018). This emphasized the importance of the availability of dedicated and ongoing funding (as well as infrastructure, staff, and time), ongoing monitoring, feedback of implementation progress, and adaptation to the local context (integration with existing programmes and policies). In addition, Lennox *et al*. highlighted the importance of:

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

Most often, sustainability assessments focus only on maintaining program activities without considering the health benefits. This can lead to the continuation of inefficient or unwanted practices. An unjustified focus on maintaining an innovation or program as originally planned may prevent it from adapting to local

circumstances, yet, as we noted earlier, adaptation is key to the whole process from adoption to sustainability.

1.2.2. Spreading innovation: diffusion, dissemination, and scaling

The various factors that help to disseminate innovation can be thought of as the continuity of pure diffusion and active dissemination. Table 1. lists several factors that are effective in disseminating and diffusing health innovations, such as social networks, opinion leaders, and masters. Also important are official dissemination programs, which tend to be more effective since these programs:

- take into account potential adopters' needs and perspectives (costs and benefits);
- tailor different strategies to different demographics, 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 describes a systematic approach that seeks to roll out a successful local programme to regional or national levels. However, the boundaries are unclear. Research on the extension of health innovations has focused on individual or discrete interventions, mostly in low- and middle-income countries (Ovretveit, 2011). There is little guidance on how to expand innovations to address the more complex and multifaceted challenges of high-income societies. In high-income countries, there are many examples of innovative service delivery approaches that have gone beyond the initial pilot project or demonstration phase and benefit the wider population.

Current evidence suggests that many factors that affect implementation more broadly (i.e., the factors listed in Table 1.) are also likely to influence increases. In addition, Willis *et al*. identified several factors that specifically facilitate scaling-up (Willis et al., 2016):

- 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.

In summary, expanding innovation is a complex and dynamic process that requires several different factors and domains to be considered.

1.2.3. Understanding the complexity and dynamic nature of innovation

The successful implementation of innovative solutions depends to a large extent on the provision of services in the context in which the innovation takes place. These contextual factors are often described as 'facilitators' or 'barriers' and are considered in isolation. However, these contextual factors are part of normal practice (May et al., 2016), and, importantly, they interact with each other. Therefore, when considering the uptake of an innovation in the organization and delivery of a service, it is important to take into account that the relationship between innovation, its implementation and the context in which it is introduced is dynamic and likely to change over time (Pfadenhauer et al., 2017). This definition reinforces the flexibility of innovation implementation, which should be considered by implementers. But how to do it in practice remains a challenge. This challenge is explicitly addressed in the work of Greenhalgh and his colleagues (Greenhalgh & Abimbola, 2019), which specifically considers the critical role of the wider context into which innovations must become embedded.

One example of this is the NASSS framework (see Chapter 2), which focuses on the take-up of digital health technologies, but can also be applied more broadly to innovations in various other services. The framework identifies seven domains that influence the adoption, non-adoption, abandonment, spread, scale up and sustainability of technology-based innovations.

1.3 The importance of human-centredness in evaluation frameworks

Human-centred care or PCC is a broad concept including patient-centredness, family-centredness, customer-centredness, personal medicine, person's health, individuality, coordination of the treatment process and the person's involvement and close ones. While the concept of human-centredness, for example, a patient-centred medical home, or patient-centred care more broadly, is not entirely new, we still face challenges in implementing patient-centred care systems. Even though, new trajectories for treatment and ways of thinking about human-centredness have recently appeared. The human-centredness concept includes, for example, team care and care transitions to digital care. Quality improvement is a primary tenant of the patient-centred medical home model. Technology can help support clinical quality improvement by collecting, processing, and analysing clinical data.

Whereas initially, the emphasis was on patient-centredness, the use of the concept of human-centredness has been increasing through the recent years. Patient-centredness is primarily a disease-based approach when the person has entered the health system, while human-centredness looks at the person as a whole and with their background system. Human-centredness consists of many different components (see Figure 1), and therefore, it is important to keep them in mind when designing solutions and developing activities.

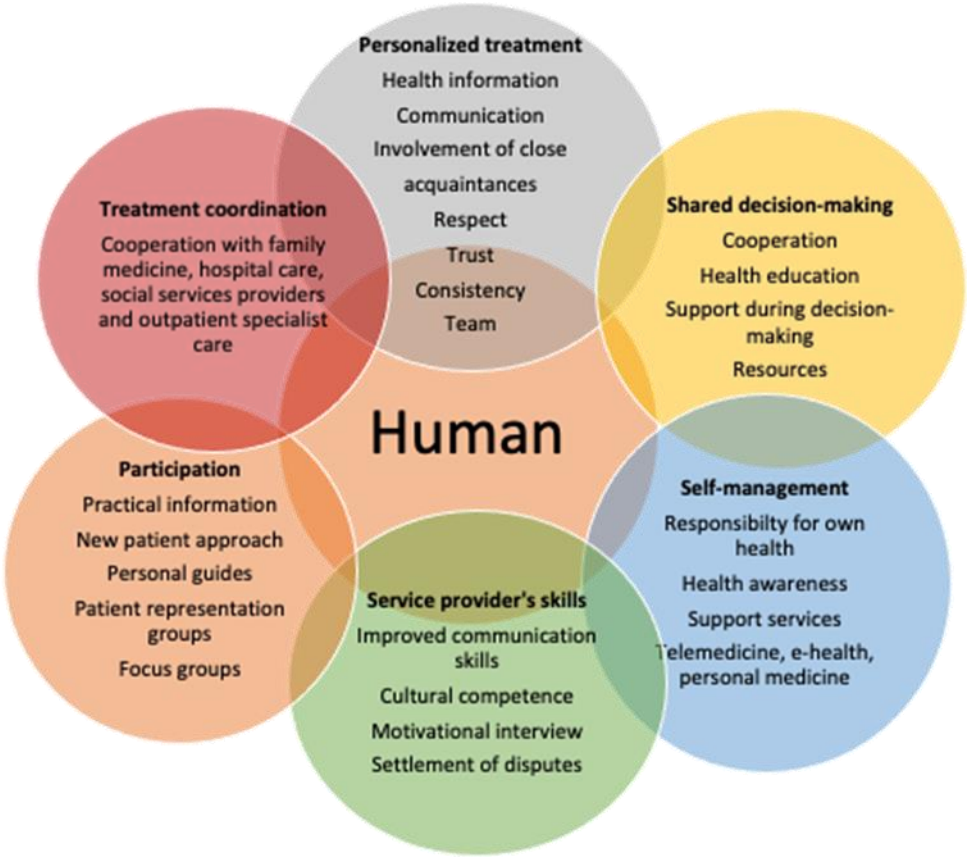

FIGURE 1. HUMAN- CENTREDNESS COMPONENTS (PAAT-AHI ET AL., 2017)

HCD has its roots in multiple fields, for example ergonomics, and it is described as an 'approach to systems design and development that aims to make interactive systems more usable by focusing on the use of the system and

applying human factors/ergonomics and usability knowledge and techniques'. This kind of approach addresses the needs of the human, identifies the different stakeholders and contexts of use, and empathizes, communicates, interacts, and stimulates all the people involved. HCD is very much different from many traditional design practices because the focus lies with the people for whom the solution is intended, rather than in the designer's personal creative process or the technology or material solution itself. This means, the human is at the centre of the design process and the solution (Giacomin, 2014).

The greatest challenges in health and social care are centred at the human level. After all, it is a domain centred on humans and how to heal them. Sometimes technology complicates human-to-human relationships instead of improving it since administrative tasks, data management, claims management, billing and insurance take greater priority over patients and clinicians. For larger healthcare systems, complexity is inherent to the system. To keep the ship floating, all the crew must perform their tasks, but in doing so, they may forget about the passengers (Improve Patient Engagement with Human-Centered Design for Healthcare, 2018). To solve the problem, a new way of listening to people is gaining popularity – it involves understanding what clinicians and patients have to say and working with everyone involved.

Governments across the Western world, together with private enterprises, healthcare providers and patient organisations, are emphasising the need for health and social care to be more explicitly centred on the needs of the individual patient, prioritising the philosophy and practice of PCC as the core of new and effective models of care delivery (Berntsen et al., 2018; Kitson et al., 2013). The hallmark of PCC is a partnership between patients and health and social care providers to increase patients' active and daily participation in their health. Such communication does not require a face-to-face visit but can be provided by computer technology (Parker et al., 2018). In fact, health information technologies may be important facilitators for PCC (Abimbola et al., 2019; Wildevuur & Simonse, 2015).

The rationale for implementing technology-supported PCC relates to the general development trends of most Western societies, such as demographic changes, growing social and cultural inequalities, and greater health expectations. Governments expect an increase in both the absolute number and proportion of older people in the population, many with chronic and complex medical conditions, and have invested in technology-supported solutions to meet these societal changes (Hajat & Stein, 2018; Mort et al., 2015).
Although few would argue about the overall philosophy of the PCC or the potential of IT, there is less agreement on how to make technology-supported PCC a reality in everyday clinical practice. Researchers argue that there is a significant gap between the enthusiasm, high hopes and expectations of policy makers, managers and IT developers and the challenges of implementing technology in actual practice (Pope et al., 2013), and they point to the need for new research that will happen in clinical practice as governments seek to modernize health services through IT. Research can better inform decisions about health policies, programs and practices and help those who want to design and implement such initiatives to identify and address key challenges (Greenhalgh et al., 2017). There is a need to understand how complex practices are made workable and integrated in context-dependant ways (Nilsen, 2015) and theorize on challenges and failures to adopt or normalize technology-supported programmes. Seemingly well-functioning technology trials still tend to fail in the day-to-day practice of final implementation, and the failure to introduce technology is often not just a matter for individuals. Therefore, research must examine the dynamic interplay between healthcare professionals, patients, the technology used, team functioning and economic, managerial, and regulatory factors. All of these factors and others can be facilitators or barriers to implementation processes (Dyb et al., 2021).

For this report, multiple indicators and domains were reviewed to choose the most suitable toolkits (see Chapter 2). These domains included some, which are closely related to human-centredness. These were: patient-centredness, need for care, quality of life, societal change, the impact of an intervention, patient perspective, ethical aspects, and age aspects. It is important to emphasize that it is necessary for useful innovation evaluation

toolkits to comply with domains, since human-centredness and HCD are very encompassing and have been a topic of growing interest and implementation.

For a more detailed conclusion of the relations between HCD and the different toolkits, see Chapters 2.1, 2.2, and 2.3.

2. Examples of toolkits

It is necessary to thoroughly understand different toolkits for assessing innovation in the field of AHA - there are essential principles, that good evaluation must comply with. The principles contain different components and descriptions, which are helpful for innovation providers.

First, we gathered all toolkits that included health and wellness aspects in our search. In total we found 105 different toolkits. We then narrowed down the search from an innovation/solution perspective to 36 toolkits. We then narrowed our selection down to health and well-being innovation assessment, focusing on the following domains (about 20 toolkits): cost-effectiveness, clinical effectiveness, patient-centredness, technological effectiveness, need for care, quality of life, societal change, the impact of an intervention, staff change, organizational change, adaptation, policy context, regulatory context, socio-cultural context, time dimension, patient perspective, economic aspects, ethical aspects, and age aspects. We selected these domains based on recognized evaluation frameworks (Abimbola et al., 2019; Dyb et al., 2021; Greenhalgh et al., 2017; Mort et al., 2015; Moullin et al., 2015; Nilsen, 2015; Raposo, 2016; Reeve et al., 2015; Wade et al., 2017).

Although we analysed about 20 toolkits (more relevant ones are also given in Appendix 1), we included three of them in this report - MAFEIP, MAST, and the NASSS framework - since they cover the abovementioned domains (see also Table 2) and because they can all be used to evaluate health technology innovations. However, looking at the table below, it must be borne in mind that these are generic domain names and, for example, in the MAFEIP, the cost-effectiveness aspect has been considered much more thoroughly than in the NASSS framework.

TABLE 2. DOMAINS TAKEN INTO CONSIDERATION

Aspects	**MAFEIP**	**MAST**	**NASSS**
Cost-effectiveness	yes	no	partly
Clinical effectiveness	yes	yes	yes
Patient-centredness	partly	partly	yes
Technological efficiency	yes	yes	yes
Need for care	no	no	yes
Quality of life	yes	no	partly
Societal change	yes	partly	partly
Impact of the intervention	yes	no	yes
Staff change	yes	no	yes
Organizational change	no	yes	yes
Adaptation	no	no	yes
Political context	no	no	yes
Regulatory context	yes	yes	yes
Socio-cultural context	yes	no	yes
Time aspects	yes	no	no
Patient perspective	partly	partly	Yes
Economic aspects	yes	yes	no
Ethical aspects	no	yes	no
Age aspect	yes	no	yes

2.1 MAFEIP overview

MAFEIP is a web-based toolkit designed to assess the health and economic outcomes of different ICT-enabled social and health innovations. These include, among others, new care pathways, devices, surgical techniques, and organizational models. MAFEIP is based on the principles of DAM, more specifically on the traditional Markov model (Williams et al., 2018) . This approach is commonly used in health and economic evaluations to assess the impact of innovations in terms of health outcomes and resource use, estimating the changes in different resource uses and quality when using innovative solutions instead of current care.

The DAM module of the MAFEIP kit contains 5 steps: information, model input, model output, sensitivity analysis and model output on sensitivity analysis. The DAM module integrates data from multiple sources to assess the impact of the innovative solution.

The model input takes into consideration data from multiple categories: model assumptions, time horizon for the analysis, target population, patient flow through model states, initial distribution among states, transition probabilities, transition probability fields for the 5-state model, relative risks for mortality and mortality rates, relative risks for mortality, target population-based mortality rates, one-off and annual recurrent costs, standard care costs, Health State costs, Health State costs for the 5-state model, and mapping other utility scores into EQ-5D values.

The model output will describe data ranging from incremental costs and effects (age and gender specific), cost-effectiveness, population impact, patient flow through model states, sensitivity analysis, Univariate Sensitivity Analysis, parameter impact on incremental costs, and parameter impact on incremental effects.

2.1.1. MAFEIP domains and base models

As said already, the purpose of the MAFEIP kit is to estimate the health and economic outcomes of different social and technological innovations compared to the current situation. Therefore, there are two different options for analysis outcome: retaining the current care situation or intervening with an innovation. The two options differ in multiple terms, e.g., transition probability and healthcare cost, among others.

The toolkit measures the likelihood of interventions achieving expected impacts. It also allows to simulate changes in the interventions to improve impacts and guide further development and evaluation. The toolkit allows the user to choose the number of states of the Markov model, depending on which model best reflects the intervention assessed. The models, for example, allow for the synthesis of evidence from multiple sources, account for the uncertainty associated with the decision and the extrapolation of evidence over an appropriate time horizon (Boehler et al., 2015). In the case of MAFEIP, the large variation of interventions to be analysed across multiple settings and populations requires a high level of flexibility of the model.

2.1.2. MAFEIP practical use

The toolkit has been tested by a diverse range of institutions – governments, SME's, large companies, academia, etc. MAFEIP has gone through collaborative improvements and refinement processes which have made it usable and flexible to adapt to different users.

The main aim was developing and implementing this web-based tool, its main characteristics and capability to provide specific outcomes that are of value to the developers of an intervention, as well as a series of case studies planned before wider rollout (Boehler et al., 2015). Several case studies have been conducted with this toolkit, ranging from pre-market assessment of early health technologies to retrospective analysis of established care pathways.

The i-PROGNOSIS project (www.i-prognosis.eu) conducted a systematic study of interventions in patients with Parkinson's disease in Greece, the United Kingdom and Germany (Grammalidis et al., 2015). These interventions produced the Intervention Data, on which the MAFEIP evaluation was based. It was found that the differences between the parameters entered for the three countries are relatively small: discounts have small differences, costs are a bit higher in Germany and UK and mortality rates are also similar. Also, as the total PD patient population estimate for each country differs significantly, the cumulative incremental cost gains in a horizon of 20 years also varied significantly (Grammalidis et al., 2015).

Another project examined the impact of an exercise program on 65+ older adults at risk of falling. Patients from 2 healthcare centres in Valencia, Spain participated in a study. A total of 55 participants attended the physical exercise program and a total of 136 participants conformed the comparison group. Participants were assessed at baseline and after 9 months for final evaluation. Risk of falling was assessed through two different criteria. Initially, 90.9% of the intervention group and 63.2% of the comparison group presented a risk of falling, but after 54.5% of the intervention group showed an improvement in the risk of falling and 45.5% of the intervention group showed no progression. It was summarised that the costs directly related to the intervention (Boehler et al., 2015).

2.1.3. Human-centredness with MAFEIP

MAFEIP has the potential to improve the quality and relevance of future research and to effectively serve the information needs of patients, clinicians, stakeholders, and other decision makers by helping to identify gaps in evidence, providing important contributions to the comparative effectiveness and patient-centred outcomes research. An example of this is the i-Prognosis project (see Chapter above). The results of the MAFEIP analysis showed that the project interventions may have positive effects on the physical symptoms of PD and that they can potentially lead to a significant reduction of health and social care costs associated with this disease. These findings are another step in the direction to raise awareness for personalized medicine and the improvement of life of patients living with PD.

As seen in the beginning of Chapter 2, MAFEIP takes into consideration the following human-centredness related domains: patient-centredness, quality of life, societal change, the impact of an intervention, patient perspective, and age aspects. It fails to include the need for care and ethical aspect domains. This means that MAFEIP could be considered somewhat successful in including HCD. It is necessary to point out that MAFEIP is mostly used as an innovation evaluation toolkit to determine the cost-effectiveness of the innovative solution. MAFEIP measures the likelihood that the innovation will achieve their expected impact in terms of increased efficiency, improved health, and quality of life. The added value for users of the MAFEIP-tool is its ability to provide an early assessment of the likelihood that interventions in their current design will achieve the anticipated cost impact, and to identify what drives interventions' effectiveness or efficiency to guide further design, development, or evaluation (Boehler et al., 2015).

2.2 MAST overview

MAST is one of the evaluation frameworks focusing on the measurement of effectiveness and quality of care. MAST represents a multidisciplinary process of evaluating the medical, social, economic, and ethical aspects of telemedicine in a systematic, unbiased, and robust manner (Kidholm et al., 2017).

STEP 1: Preceding assessment: • Purpose of the telemedicine application? • Are the technology and the organization matured?
STEP 2: Multidisciplinary assessment: 1. Health problem and characteristics of the application 2. Safety 3. Clinical effectiveness 4. Patient perspectives 5. Economic aspects 6. Organisational aspects 7. Socio-cultural, ethical, and legal aspects
STEP 3: Transferability assessment: • Cross-border • Scalability • Generalizability

FIGURE 2. THE THREE STEPS IN MODEL FOR ASSESSMENT (EXAMPLE OF TELEMEDICINE)

The use of MAST includes 3 steps as described in Figure 2. In the first assessment step, the maturity of the technology and the organization using the solution is assessed before the assessment of effectiveness is carried out. If the maturity of the solution needs to be further developed, formative studies (PD, usability, feasibility) must be carried out. Following implementation, a multidisciplinary assessment step is carried out to evaluate the effectiveness of the technology (Kidholm et al., 2012). Eventually, an assessment should be made of the transferability of the results reported in studies carried out in previous steps.

The toolkit takes into consideration the following data from multiple categories: health problem, description of the application, technical characteristics, current use of the application, process, structure, culture, management, clinical safety (patients and staff), technical safety (technical reliability), effects on mortality, effects on morbidity, effects on health-related quality of life (HRQL), behavioural outcomes, usage of health services, satisfaction and acceptance, understanding of information, confidence in the treatment, ability to use the application, access and accessibility, empowerment, self-efficacy, related changes in use of health care, ethical issues, legal issues, social issues, number of resources used when delivering the application and comparators, prices for each resource, clinical effectiveness, expenditures per year, and revenue per year.

2.2.1. MAST domains and base models

MAST includes 7 domains including identification of the health problem and characteristics of the application, safety, clinical effectiveness, patient perspectives, economic aspects, organizational aspects, and socio-cultural, ethical, and legal aspects. It is found that researchers may focus on individual domains depending on the research question and other limitations, however, it is recommended that MAST should be applied as a complete framework.

2.2.2. MAST practical use

In between 2013 and 2017 studies were published on the topic of telemedicine interventions and it was found that these took place in 12 European countries. Most telemedicine interventions were home monitoring of patients with chronic diseases (diabetes, heart disease etc.), others included patients with obesity or with limited access to care and parents using neonatal home care.

Another research by Dario et al. investigates that patients with implantable devices should be followed up every 3–12 months, which traditionally required in-clinic visits (Dario et al., 2016). The objective of the study was to analyse the impact of remote monitoring for PM and ICD. The evaluation focuses on how this service is carried out, also analysing the impact on the cardiology unit and the health system, and multiple organizational features. It was found, that scaling up remote patient monitoring requires effective strategies to address clinical, technological, organizational, economic, and ethical dimensions. (Dario et al., 2016)

In other studies MAST has been used as an assessment tool with outcomes of the fourth domain of patient perception. Most studies used general terms like user perception, user perspectives or patient experience when describing the outcome measures included. Dario et al. found that information about patients' perception and acceptability of telemedicine is still limited. This is a problem because even though patients are involved in the development of new technologies, patients' acceptance of telemedicine may vary – for example, 34% of the patients in the Italian part of the RH project declined to participate (Dario et al., 2016).

2.2.3. Human-centredness with MAST

As seen in the above examples, MAST has been used widely to examine its use and the perception of its usefulness and give proposals for improvements. The concluding statements acknowledged that MAST had been mostly used to assess preceding considerations, assessment within seven domains, transferability, whether services were based on scientific standards and guidelines for developing a basis for investment decisions, and applicability and relevance to patient-centred pilots. It was also concluded that MAST had served well as a practical tool while being somewhat inadequate in considering human-centredness and HCD.

Concerning human-centredness, new domains have been suggested to further improve framework's relevance. These included: technological usability, responsible innovation, health literacy, behavioural change, caregiver perspectives, and motivational issues of professionals (Ekeland & Grøttland, 2015).

For this report, human-centredness related domains, as mentioned in Chapter 1.3, were considered when choosing the most suitable toolkits. The MAST framework considers following human-centredness related domains: patient-centredness, patient perspective, and ethical aspects. Societal change can be evaluated through other domains. It does not include the need for care, quality of life, the impact of an intervention, or age aspects. It is important to mention, MAST has a much more human-centred approach and aim comparing to other toolkits, but when comparing only domains, it ranks second. MAST does take some of the HCD related domains into consideration, creating a multidisciplinary and -functional assessment. While MAST considers the least amount of human-centredness related domains, its purpose is more human-centred than compared to MAFEIP with the aim of cost-effectiveness, but less than NASSS, which is the most human-centred toolkit.

2.3 NASSS overview

The NASSS framework was developed to study unfolding technological programmes in real time and to identify and manage their uncertainties and interdependencies, as well as the challenges of extending and disseminating solutions and the sustainability of such solutions in healthcare organizations and systems (Greenhalgh et al., 2017).

Data taken into consideration by the framework includes results and process evaluations of the RCT, survey responses, in-depth professional interviews, videotaped consultations, etc.

2.3.1. NASSS domains and base models

The NASSS framework is shown in Figure 3. The framework consists of 7 domains, each of which are of different complexity level – simple (few components, predictable), complicated (many components, largely predictable), or complex (many components interacting in a dynamic and unpredictable way). The domains of the NASSS framework are described on the right-side panel (see Figure 3) (Abimbola et al., 2019).

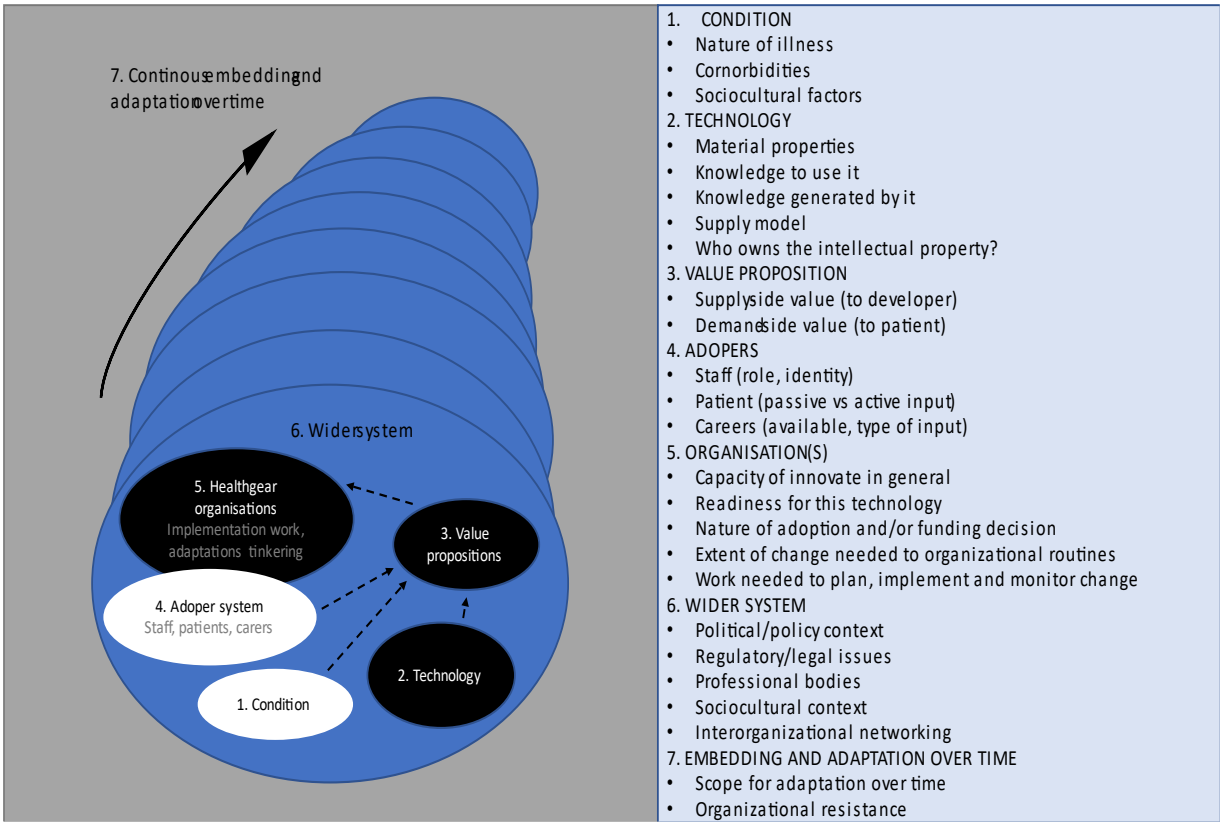

FIGURE 3. THE NASSS FRAMEWORK FOR CONSIDERING INFLUENCES ON THE ADOPTION, NON-ADOPTION, ABANDONMENT, SPREAD, SCALE UP AND SUSTAINABILITY OF PATIENT-FACING TECHNOLOGIES

The framework incorporates and combines a range of existing theoretical perspectives on diseases, technology implementation, organizational change, and systemic change (Greenhalgh et al., 2017) (see Table 3). Studies (Benson, 2019; Dijkstra et al., 2019; Greenhalgh et al., 2017, 2018) have shown NASSS being helpful with constructing a rich narrative of a technology programme and identifying various uncertainties and interdependencies that need to be contained and managed for success.

The framework has proven to be useful in understanding how and why the implementation of a technology-based intervention had resulted in mixed outcomes. However, there are limitations of using the framework as an *ex-post* analytic tool – the dataset already exists and cannot be extended or renewed with new, real-time data. NASSS has been proven to be useful to generate multi-level accounts that incorporate target health conditions, the technology, the implementing system (patients, providers, managers), organizational elements, and broader system enablers (policy, financing, etc.). The framework is essential for explaining why programmes succeeded or failed, potentially allowing learning, and improving design of the future programmes.

TABLE 3. DOMAINS OF THE NASSS FRAMEWORK

Domain	**Simple, for example**	**Complex, for example:**
1. Condition • Nature of condition/illness • Comorbidities • Socio-cultural factors	Well characterized, clear diagnostic/ treatment pathway (e.g., sprained ankle)	Unpredictable and not amenable to management by algorithm (e.g., multimorbidity in vulnerable group)
2. Technology • Material properties • Knowledge needed to use • Knowledge generated • Supply model • Who owns the IP?	Dependable, cheap, substitutable (e.g., telephone)	Requires interoperability across different organizations, regulatory challenges (e.g., information governance)
3. Value proposition • Supply-side value (developer) • Demand-side value (patient)	Intended users (clinicians, carers, patients) are willing to use technology and easy to train	Intended users are not willing or capable to use technology; resistance
4. Intended adopters • Staff • Patients • Carers	Intended users (clinicians, carers, patients) are willing to use technology and easy to train	Intended users are not willing or capable to use technology; resistance
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	High capacity to innovate, keen to change, slack resources available, capacity to monitor and evaluate	Lack of agreements and partnerships between organizations, lack of budget and capacity
6. Wider system • Political/policy context • Regulatory/legal issues • Professional bodies • Socio-cultural context • Inter-organizational networking	Clear policy push with relevant levers and incentives, regulatory framework	Top-down without funding, inconsistent policies at different tiers, lack of support from professional groups
7. Embedding and adaptation over time • Scope for adaptation • Organizational resilience	Technology and care pathway are adaptable and sustainable, organization is flexible and resilient to external setbacks	Technology or service model are implemented mechanically, organization lacks the capacity to respond flexibly to external pressure and change

2.3.2. NASSS practical use

A study from Greenhalgh *et al.* followed the very different fortunes of two software products, each designed to help relatives and friends (and sometimes professional staff) organize tasks and visits for someone with health or social care needs. Product A, a Web portal, had been developed in-house by a small software company, based on a previous caring experience by one of the company staff. The product

was not successful during the study period; fewer than 5 families were ever identified as actively using it. Product B was a smartphone app (with a linked Web portal) that had been developed via publicly funded research and development using codesign methodology by a national caregivers' charity. The app was made available commercially and users signed up gradually but steadily; at the time of writing the study over 1000 families are using the product (Greenhalgh et al., 2017).

During the Cognitive Impairment project, a GPS tracking device was used to monitor people with cognitive impairment who wandered outside their home. The project worked with a public sector social care organization to implement and adapt GPS tracking devices and a linked monitoring service for such individuals. Each index case required a high degree of tinkering, including customization of the device, liaison with the technology supplier, and adjustment of work routines to achieve a solution that was acceptable. Despite this, only 3 individuals were still using the technology by the end of the 18-month study period (Greenhalgh et al., 2017).

2.3.3. Human-centredness with NASSS

NASSS was created to study technological programmes in real time and with the objective to identify and manage uncertainties and interdependencies. Research (Dyb et al., 2021) has found that the seven NASSS domains are a feasible analytical framework for systematising, categorising, and comparing healthcare providers' experiences with technology-supported PCC initiatives. The seven domains are comprehensive and easily translated, making it easy to understand for different audiences. The framework is useful for throwing light on the levels of complexity and the main challenges. However, NASSS has been found to be insufficient for capturing the dedication and enthusiasm of care transformation. It has been emphasized that knowledge about healthcare providers and their visions as potential assets for care transformation should be increased. Human-centred care is essential for the transformation to technology-supported health and social care and for the development of new and better ways of patient treatment (Dyb et al., 2021). When it comes to technology-supported, human-centred care, the point of no return has passed for the involved health care providers. Rather, NASSS should be used to generate a rich and situated narrative of the multiple influences on a complex project, to identify parts of the project where complexity might be reduced, and to consider how individuals and organisations might be supported to handle the remaining complexities better (Greenhalgh & Abimbola, 2019).

2.3.4. Comparison of different toolkits

For this report, three different toolkits – MAFEIP, MAST and NASSS - were analysed in detail regarding domains related to human-centredness. The domains helped to narrow down the aspects which need to be taken into consideration when conducting impact evaluation with the emphasis on human-centredness.

The following table summarizes the important aspects of the various toolkits, highlighting the base models and the importance of human-centredness assessment aspects (Table 3). Even though the three toolkits are different in terms of structure (e.g., domain based, or steps oriented), it is possible to compare them in terms of output and purpose. Table 4, under the section of Human-centredness, the toolkits are compared regarding what is the main goal of the framework and how much human-centredness principles and HCD is taken into consideration when carrying out impact assessment.

TABLE 4. COMPARISON OF DIFFERENT TOOLKITS

Toolkit	MAFEIP	MAST	NASS
Base models	Markov model and its states (3, 4, 5)	Preceding assessment Multidisciplinary assessment Transferability assessment	Incorporates and combines a range of existing theoretical perspectives
Human-centredness	MAFEIP has the potential to improve the quality and relevance of future research and to effectively serve the information needs of patients, clinicians, stakeholders, and other decision makers by helping to identify gaps in evidence, providing important contributions to the comparative effectiveness and patient-centred outcomes research. However, MAFEIP does take into consideration quite a few of human-centredness related domains. It is needed to point out MAFEIP's most important objective is to evaluate the cost-effectiveness of innovation, while also measuring the likelihood that the innovation will achieve its expected impact in terms of increased efficiency, improved health, and quality of life.	MAST, a toolkit for conducting multidisciplinary assessment, has been mostly used to, for example, assess preceding considerations, transferability, or whether services were based on scientific standards and guidelines. MAST is thought of as being a practical tool, while being somewhat inadequate in considering human-centredness, new domains have been suggested to further improve its relevance in relation to HCD. While MAST considers the least amount of human-centredness related domains, its purpose is more human-centred than compared to MAFEIP with the aim of cost-effectiveness, but less than NASSS, which is the most human-centred toolkit.	The framework is useful for throwing light on the complexity of innovation and its main challenges. NASSS has been found to include many different domains relating to human-centredness, however, it does not take into consideration patient perspective or ethical aspects. Even though, it can be concluded that NASSS is quite effective for evaluating innovation regarding human-centredness.
Summary	MAFEIP measures the likelihood that the assessed interventions will achieve their expected impacts in terms of both increased efficiency and improved health and quality of life of the beneficiaries. It also allows to simulate changes in the interventions to detect the key determinants of their effectiveness and usefulness and guide further development or evaluation.	With MAST, a multidisciplinary assessment is conducted, including a description of the patients and the application and assessment of safety, clinical effectiveness, patient perspectives, economic aspects, organizational aspects, and socio-cultural, legal, and ethical aspects.	The NASSS framework was developed to study unfolding technology programmes in real time and identify and manage their possibly emerging uncertainties and interdependencies.

In conclusion, all three toolkits are helpful for fulfilling their purposes and can give sufficient feedback to innovation providers. It is possible to say that the MAFEIP toolkit mainly evaluates cost-effectiveness. MAST and NASSS, on the other hand, help assess human-centredness and are more multifunctional with multiple different domains. However, several studies have shown that only around 1-3 domains are mainly used in the evaluation process and no toolkit is considered as a whole, to address all domains. Unfortunately, there is a lack of thorough research on this topic. Even though the area of human-centredness has been topical for quite some time, the importance of human-centredness and HCD related assessment has become increasingly important just recently. Out of all three considered toolkits (MAST, MAFEIP, and NASSS), NASSS proved to be the most human-centredness related.

3. Survey on evaluation practices among service providers

As indicated before, the IN-4-AHA is a Coordination and Support Action project funded under the EU Horizon 2020 programme. The aim of the project is to enhance the uptake of digital innovations and help provide and scale solutions (service, innovation, product) to people aged 65+ to support AHA.

As part of the project, a survey was conducted to map current practices in measuring the impact of innovative solutions. The information collected by the survey is used to improve an evaluation framework for the AHA domain. The survey was conducted among the IN-4-AHA network of innovative solution providers with a purpose for collecting current practices in using evaluation frameworks and tools and challenges in evaluating impact in general. A total of 40 solution providers participated in the survey from 15 different countries. The location of participating innovation providing companies is shown in Figure 4. Almost half of the providers were from Spain and Portugal, however at least one organization replied from 9 different countries.

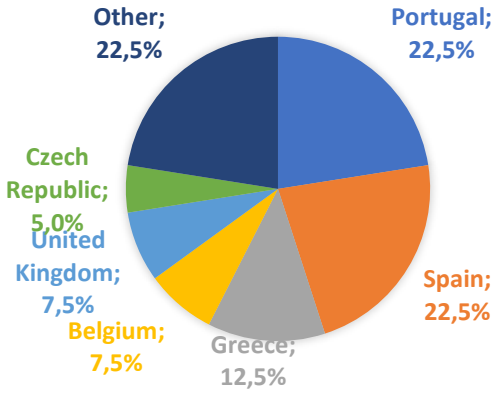

FIGURE 4. THE LOCATION OF THE SOLUTION PROVIDERS

Innovation providers were divided evenly between different organizational sizes. In Figure 5, it is shown that most of the respondents (around one-third each) are from small (<10 employees) and large (251+ employees) organizations. The smallest number of respondents were from medium-sized enterprises. Considering this, it is possible to conclude that innovative developments derive from organizations of different types and sizes.

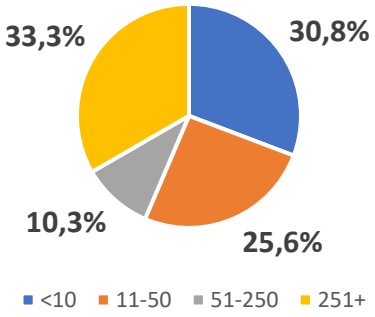

FIGURE 5. NUMBER OF EMPLOYEES IN THE ORGANIZATIONS

Figure 6 states the level of maturity of the solution. Most innovation providing organizations are in the TRL 7 level (33,3%), while there were respondents among all levels. Thus, the companies participating in our study were offering innovative solutions at different maturity levels and have different needs in assessing their innovative solutions.

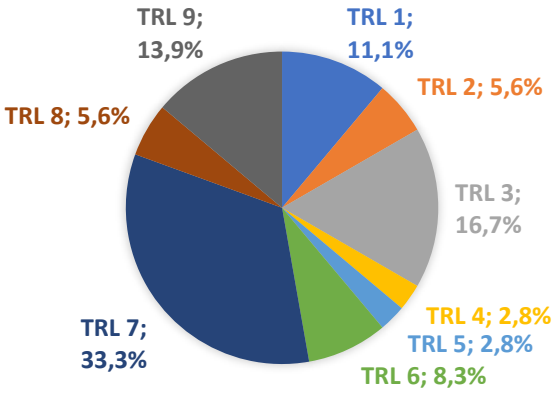

FIGURE 6. CURRENT LEVEL OF DIGITAL MATURITY OF THE SOLUTION

67% of the innovation providers answered that they are planning to bring new technological innovations to the market in the short term. Only one respondent answered that they are probably not planning to do so.

Respondents confirmed that they have most adequately assessed the following topics: human-centredness, need for care, and quality of life (see Table 5). However, some solution providers stated they had not assessed any or some of the outcomes.

TABLE 5. ADEQUATELY AND REALISTICALLY ASSESSED OUTCOMES

	Yes	No	Partly
Quality of life	56,7 %	16,7 %	26,7 %
Need for care	63,3 %	10,0 %	26,7 %
Cost-effectiveness	43,3 %	16,7 %	40,0 %
Investment needs	3,3 %	86,7 %	10,0 %
Human-centredness	70,0 %	10,0 %	20,0 %
Health system involvement	43,3 %	16,7 %	40,0 %

While analysing why the solution-providers appreciate their innovative development and impact assessment, respondents feel impact assessment makes it possible for the organization to receive support for scaling up the service in new markets or target groups (29%), while it was also a very important input for solution development (23%) (Figure 7).

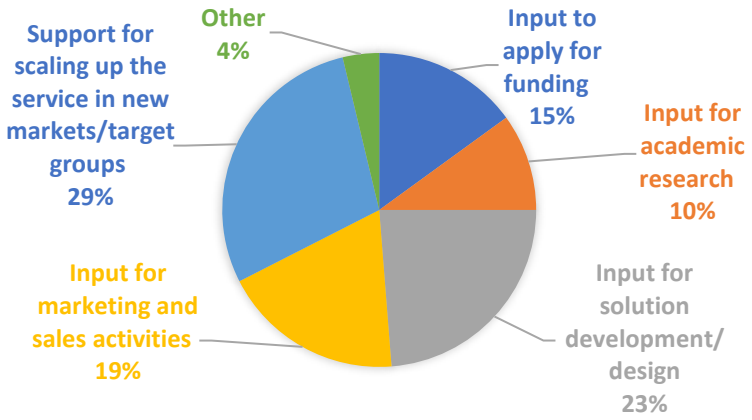

FIGURE 7. OBJECTIVES TO CONDUCT AN IMPACT ASSESSMENT

Most innovation providers answered (65%) that they have not used any innovation evaluation toolkits to assess their innovation. Those providers who have used any innovation assessment toolkits said they mainly used the MAFEIP toolkit. MAST and NASSS toolkits were also used by some providers (Figure 8).

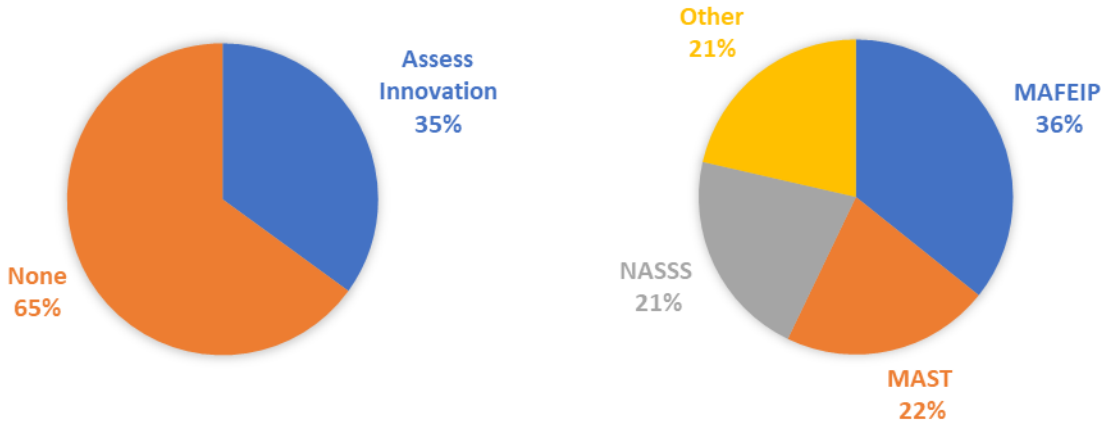

FIGURE 8. IMPACT ASSESSMENT TOOLKITS USED BY SERVICE PROVIDERS

Although the responders came from across Europe, with most respondents from Portugal and Spain, only a small number of innovation providers participated in the survey. Innovation providers are at different TRLs with their solutions, making it difficult to evaluate innovation - providers at different levels have different evaluation needs. Human-centredness, need for care, and quality of life were important topics for evaluation, which fits in very well with our project and confirms our arguments. However, as seen above, only around one third of innovation providers have assessed the impact of their innovation in the past.

While the survey results cannot be generalized for innovation providers in the AHA domain, the collected data suggests that:

- There is a need for evaluation in the domains of human-centredness, need for care and quality of life;
- There is ample room for improvement in the take-up of evaluation tools that can benefit innovation providers in the further service design, bringing evidence on the outcomes for users and the impact these innovations create in the AHA-related ecosystem.

4. Summary

The objective of this report was to give an overview of innovation as a concept, a theoretical framework of human-centredness, and an overview of toolkits and their basic principles. The report provides overviews of three toolkits (MAFEIP, NASSS, MAST), but about 20 toolkits (see Appendix 1) were reviewed and analysed beforehand. In summary, each toolkit is designed for a specific purpose and for a specific project; therefore, it is difficult to find a so-called universal tool for everything. The three toolkits covered in the report were found to include most of the domains needed and are closest to the domains that best support the IN-4-AHA project, as they have been used in quite a few different projects, although with some limitations.

For this project, a focus of human-centredness and its evaluation was set. While all the toolkits can be used to evaluate human-centredness to some extent with modifications, it is important for this project to develop a framework that best considers human-centredness and related domains to help achieve the project's goals.

As seen above, NASSS can be brought out as the toolkit with the biggest focus on human-centredness, even though to some extent, human-centredness has been addressed in multiple toolkits. However, while NASSS is the most human-centred toolkit and thus could be most helpful when evaluating human-centredness, it is important to emphasize multiple shortcomings – e.g., NASSS does not consider ethical aspects and only partly considers patient's perspective, similarly to the other two toolkits. This means there is a need for an even more human-centred toolkit which considers domains related to HCD – this is something the project and its upcoming activities aim to do.

As seen in our survey results, 70% of respondents felt that human-centredness was an important issue that should be assessed, therefore it is important to construct a toolkit which meets this need.

The survey results also revealed that the existing toolkits are not used much. Unfortunately, the format of the survey does not make it possible to point out exactly why, but it can still be assumed that the existing toolkits do not fit well with the profile and needs of the service providers. Another reason may be that service providers simply do not know about the existence of different toolkits, as there are many of them, and in some cases, considerable financial resources are needed to access them. Therefore, it is important for us, within the framework of this project, to provide the best possible tool for service providers to carry out evaluations.

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ANNEX 1. SELECTION OF ANALYZED TOOLKITS

MAFEIP	**MAST**	**NASSS**	**Rainbow**	**Momentum**	**EUnetHTA Core**	**HIAT**
MAFEIP is a web-based tool with the purpose to estimate the health and economic outcomes of a large variety of ICT enabled social and health innovations, including new care pathways, devices, surgical techniques, and organisational models, among others.	Multidisciplinary assessment, including description of the patients and the application and assessment of safety, clinical effectiveness, patient perspectives, economic aspects organisational aspects and socio-cultural, legal, and ethical aspects.	The NASSS (non-adoption, abandonment, scale-up, spread, sustainability) framework was developed to study unfolding technology programmes in real time—and to identify and manage their emergent uncertainties and interdependencies.	There are many different methods and processes that can be used in M&E. The Rainbow Framework organises these methods and processes in terms of the tasks that are often undertaken in M&E.	MOMENTUM will develop new and enhanced tools for supporting decision and policy making with regards to new forms of mobility.	HTA Core Model Online is from 2019 onwards developed and hosted by the Finnish Coordinating Centre for Health Technology Assessment (FinCCHTA) at the Oulu University Hospital. There was a period of inactivity in updating the site's contents and hence it is possible that some materials on this site do not fully reflect the status of EUnetHTA.	Health inequalities assessment toolkit focuses on reducing health inequalities and tackling their causes.
MHPSS	**NHS Change Model**	**LGA Integrated care value case toolkit**	**North West London Whole Systems Integrated Care toolkit**	**ISO 56002:2019 Digital Toolbox**	**A Toolkit to Navigate From Concept to Clinical Testing**	**MAPS**
For general comprehensive guidance on MHPSS assessments, as well as various tools for assessing MHPSS problems and resources.	The NHS Change Model has been created to support the NHS to adopt a shared approach to leading change and transformation.	Directory of resources from the Local Government Association to allow organisations and commissioners to better understand the evidence and impact of different integrated care models.	The toolkit is the culmination of over 200 individuals and organisations across North West London coming together to share knowledge and develop ideas as to how to implement whole systems integrated care.	A guiding standard on how to build innovation management systems, and part of the ISO 56000 innovation management series.	The toolkit consists of 6 steps: step one emphasizes concept generation by defining a specific clinical problem and the existing solutions aimed to address it; step two aims to recruit a multidisciplinary team within an academic institution; step three leverages technology accelerators and industry partnerships;	The MAPS Toolkit provides actionable information that will help project teams to consider and address diverse concerns relating to scaling up and sustaining their mHealth product.

					step four develops the digital health technology with continuous feedback from patient and family end-users; step five solicits feedback from a diverse array of stakeholders; and step six performs a clinical study at a single site that, if successful, rapidly scales to multiple sites.	

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