Action Plan to create conditions for the adoption of integrated care in Scotland – Transferability of "Hospital@Home" Good Practice in Puglia Region

Background: The objective of the Action Plan is to reflect on the possibility to transfer and adopt the learning about the Hospital@Home Good Practice in Puglia Region in Italy to local settings in Scotland, including the feasibility of the transfer and recommendations on policy priority actions that would enable the creation of local conditions for the adoption of integrated care.

The Action Plan builds on the outcomes of the study visit organised in Puglia Region on 13-14 June 2018. The study visit was an opportunity to learn about the Good Practice and discuss its potential transferability by comparing and contrasting the requirements of the Good Practice with the maturity of local health and social care system for integrated care in Scotland. As such, the Action Plan can inform the health and social care authorities about the future strategies and policies related to the Hospital@Home services in Scotland. This process was facilitated by SCIROCCO self-assessment tool which provided the basis for the twinning and coaching activities.

The Action Plan are co-designed jointly with the Puglia Region as a transferring region and Scotland as receiving region as follows:

- Section 1: Needs of the adopting region - **Receiving region**

- Section 2: Description of the integrated care solution - **Transferring region**

- Section 3: Maturity requirements of the integrated care solution - **Transferring region**

- Section 4: Benefits and opportunities of integrated care solution - **Receiving region**

- Section 5: Conditions for the adoption of integrated care solution - **Receiving region**

- Section 6: Adaptation of local environment to enable the transferability of learning - **Receiving region**

- Section 7: Priority actions to enable conditions for the transferability of learning - **Receiving region**

1. *Needs of the receiving region - Scotland*

Scotland, similarly as other regions and countries in Europe, is facing the impact of ageing population and increased number of people with chronic conditions on health and social care delivery. The focus on hospital-based, disease-based and "silo" curative models further undermine the ability of healthcare system to provide high-quality and financially sustainable care. In Scotland, there is a recognition of the need to move towards a more integrated, person-centred approach that is designed for citizens in a way that co-ordinates services around their needs and puts them in control, thus enabling them to participate in and make informed decisions about their care. A mainstreamed adoption of technological solutions within service redesign is perceived as a major facilitator of such a change.

This ambition is reflected in a number of policies and strategies in Scotland; for example:
- the Public Bodies (Joint Working) Scotland Act 2014[1] which introduced a formal integration of health and social care
- Digital Health and care Strategy: enabling, connecting and empowering (2018)[2] which focuses on the use of technology to reshape and improve services, support person-centred care and improved outcomes.

As such, Scotland is very keen to explore and learn from the experience of others particularly in the area of adoption of technological solutions in the routine care. The Technology Enabled Care (TEC) Programme was set up by the Scottish Government to address the need to focus on primary, community and home-based care rather than acute specialities, with the general objective of ensuring that outcomes for individuals, in home or community settings, are improved through the application of technology as an integral part of quality cost-effective care and support. It has provided national focus, the profile and visibility of technology enabled care has been significantly increased, leading to a greater cohort of individuals championing the use of TEC. However, the mainstreaming of the TEC initiatives into the routine care still remains a challenge, hence the opportunities of how to introduce and maintain these initiatives business as usual need to be further explored.

2. *Integrated care solution to address the needs of receiving region*

2.1 *Transferring region*: **Hospital@Home Good Practice in the Puglia region**

Hospital@Home Good Practice is designed as a technological support for already structured activities in home care. The main objective is to reduce hospitalisation and re-hospitalisation rate and to improve the quality of care for patients at home. In addition, the objective is to:

- Reduce the number of patients with heart disease, diabetes and other chronic diseases in the process of instability
- Activate protected de-hospitalisation
- Optimise the therapy and diagnosis according to international guidelines.

The Good Practice has also an ambition to validate new telemedicine models applied for diagnostic and therapeutic pathways for the management of chronicity. The aim is to implement a new type of telemonitoring, based on continuous collaboration and patient monitoring by different professionals and different users.

Patients, opportunely selected, are telemonitored by their General Practitioners by using the innovative home and health monitoring technological solution (H&H Hospital@Home). This solution is able to detect the main clinical and instrumental parameters in addition to the therapeutic administration, based on oxygen and bronco-aspiration. It is allocated at the patients' home and it is permanently interconnected with the General Practitioner and/or Specialist, by computer, telephone, tablet and other devices.

At the same time, there is a central monitoring room at the hospital in Ceglie Messapica (Brindisi) for all patients and all devices located at their home. All clinical parameters of patients are stored on a dedicated server, respecting the rules for the respect of privacy. The system allows the healthcare professionals (neurologists, pulmonologist, cardiologists, diabetologists, etc) to monitor and speak with patients remotely. The patients can also activate the visit of the healthcare professionals in their homes. In addition to real-time monitoring of physiological parameters, the healthcare professionals can also monitor the physical and technical characteristics of home device. As a result, it is possible to deliver therapy to the patient remotely. In particular, it is possible to deliver oxygen therapy and endocavitary aspiration. Healthcare professional determines the limit of the range of physiological parameter values and when the parameter is beyond the limit, the system draws the operator's attention through the alert.

2.2 *Transferring region*: Current progress of the Hospital@Home Good Practice in Puglia Region

Challenges/problems that the Good practice is supposed to solve:

The five challenges that Hospital@Home Good Practice addresses are:
- Reduction of the number of patients with chronic diseases in the process of instability
- Reduction of hospitalisation and re-hospitalisation
- Activation of protected resignation
- Optimisation of the therapy and diagnosis according to international guidelines
- Promotion of the integrated management of hospital and community.

Key innovative elements of the Good Practice

Hospital@Home Good Practice is based on increased collaboration and involvement of General practitioners, specialists, nurses, patients and their caregivers.

The analysis of data related to the monitoring of about 100 patients allows better understanding of the effectiveness of the remote monitoring system and to what extent it improves the quality of care for patients. Patients are directly supervised by their General Practitioners in a much faster way which in turn increases the performance. We notice a very facilitated dialogue between General Practitioners and Specialists in delivering the service. Finally, the General Practitioners feel more supported by the Specialists when there

is a need for a quick consultation. 60% of patients are over 65 years old. 30% of the patients suffer from heart diseases, 40% patients of COPD and the remaining patients are diagnosed with diabetes. In all of the patients who presented the values of blood oxygen saturation beyond the threshold, oxygen administration by concentrator has allowed to re-establish the normal clinical condition. In approximately 30% of patients is the drug therapy that improved due to telemonitoring.

Costs/investments needed for the deployment of the Good Practice:

The total investment necessary for the adoption of Hospital@Home Good Practice is between €100.00 - €499,999. The main source of funding came from the European Union, specifically European Regional Development Fund (ERDF).

Impact/outcomes observed:

There is an evidence that the Good Practice is economically viable, and it brings benefits to the target group. Further research is needed in order to achieve market impact and make the Good Practice part of the routine care.

The advantages of the use of H@H hospital equipment at home are:

- Reduction of hospital stays
- Greater assistance for the patients delivered directly to their homes
- Improvement of the psychological and physical conditions
- Improvement of the therapeutic plan
- Easier monitoring of physiological parameters
- Easy to use and flexible management system.

The Good Practice has been transferred within the same region. A similar initiative is launched in another area of Italy, based on a slightly different organisation of the care model.

For a full description of the Good Practice please see:
https://www.scirocco-project.eu/p6-puglia-italy-telehomecare-telemonitoring-teleconsultation-and-telecare-project-aimed-at-patients-with-heart-failure-chronic-obstructive-pulmonary-diseases-and-diabetes/

Other useful links include:
http://www.hospitalathome.org/
http://www.hospitalathome.it/index.php?lang=it

3.   *Maturity Requirements of Hospital@Home Good Practice in Puglia Region*

3.1   Transferring region: Maturity requirements for the adoption and transferability of Hospital@Home Good Practice is captured in the spider diagram below and detailed justification is provided in the following Table:

Figure 1: Maturity requirements of Hospital@Home Good Practice

Dimension	Score	Description	Features of the Good Practice
Readiness to Change	4	Leadership, vision and plan clear to the general public; pressure for change	It is important to have leadership; it also needs to be in line with the general vision of policy makers and professionals involved.
Structure & Governance	4	Roadmap for a change programme defined and accepted by stakeholders involved	It is necessary to have a clear roadmap for a change programme, including clear definition of regulation, supported by shared vison with stakeholders.
eHealth Services	3	eHealth services to support integrated care are piloted but there is no yet region wide coverage.	Information sharing among professionals is needed as well as a central monitoring control room to coordinate the monitoring of patients.
Standardisation & Simplification	3	A recommended set of agreed technical standards at regional/national level; some shared procurements of new systems at regional/national level; some large-scale consolidations of ICT underway	The activation of the remote monitoring doesn't need specific ICT standards, but the solution needs to be interconnected with the Regional Platform. The adopted technology needs to comply with the existing standards.
Funding	4	Regional/national funding and/or reimbursement schemes for on-going operations is available	An initial investment for the procurement of the bed side table is needed. Nevertheless, the Good Practice can also be implemented by building an agreement with the IT provider and make the maintenance of the service and training of healthcare professionals as part of the procurement.
Removal of inhibitors	2	Strategy for removing inhibitors agreed at a high level	The key to success is a minimum impact in the routine of healthcare professionals involved. Some in-depth information about the service shared among the stakeholders involved, including patients and care givers can help the removal of possible obstacles or diffidence.

Dimension	Score	Description	Features of the Good Practice
Population Approach	3	Risk stratification used for specific groups i.e. those who are at risk of becoming frequent service users –	Population stratification is not needed. Shared healthcare pathways among the actors of the Care team is envisaged in order to guarantee the correct monitoring of the patients both clinically and psychologically.
Citizen Empowerment	3	Citizens are consulted on integrated care services and have access to health information and health data	Patients enrolled in this good practice are very frail. Stabilised but bed ridden. They need to be informed and trained for the use of the platform, but a big work needs to be done also on the side of care givers. Self-motivation of the patients is critical for the success.
Evaluation Methods	4	Most integrated care initiatives are subject to a systematic approach to evaluation; published results	It is important to have an evaluation habit. The possibility to have a systemic evaluation system helps. The data collection informs a continuous improvement of the ICT software/system used.
Breadth of Ambition	3	Integration between care levels (e.g., between primary and secondary care) is achieved	It is necessary to have integration between hospital care and primary care. The practice can easily take off wherever there is integration between care levels.
Innovation Management	3	Formalised innovation management process is planned and partially implemented	The implementation of the Good Practice is based on an important change of approach in managing frail chronic patients out of hospital. The principle of de-hospitalization must be embedded in the policy vision.
Capacity Building	3	Learning about integrated care and change management is in place but not widely implemented	It is necessary to train professional for the use of the devices and activate continuous learning and training processes.

4. *Benefits and opportunities of the adoption of Hospital@Home Good Practice in Scotland*

The learning about the Hospital@Home Good Practice showed clear similarities of Puglia Region and Scotland's vision of how to transform care delivery. The main focus in both regions is to look for the primary care led solutions which would help to shift the balance of care from hospital to community settings, increase capacity and reduce the demands on health and social care services.

As such, a number of opportunities were identified in Scotland, namely:

- **Opportunity to improve engagement of GPs** in the delivery of technology enabled care solutions. The proposed solutions need to have a minimum impact on the routine working practice of GPs. Otherwise GPs often feel protective of their own roles and are thus a main barrier to implement a change. GPs need to drive a change and advocate for the new solutions.
- **Opportunity to improve the funding of care transformation**. The resources need to follow transformation of services to community settings.
- **Opportunity to better promote benefits and impact of technology enabled care solutions** in order to facilitate their "buying". Systematic evaluation and quality data collection is a key component of successful Hospital@Home services in Puglia.

> - Opportunity to better target citizens who would benefit most from technology enabled care solutions. The population approach and use of predictive modelling need to become part of routine care and service design.

5. Conditions for the adoption of Hospital@Home Good Practice in Scotland

5.1 Maturity of local health and social care system in Scotland

Receiving region: Maturity of Scotland's health and social care system for the adoption of Hospital@Home Good Practice, highlighting the strengths and weaknesses of the local system.

Figure 2: Maturity of Scotland's healthcare system

5.2 Conditions enabling the adoption of Hospital@Home Good Practice in Scotland

Receiving region: Maturity of healthcare system in Scotland and maturity requirements of the Hospital@Home Good Practice in Puglia Region:
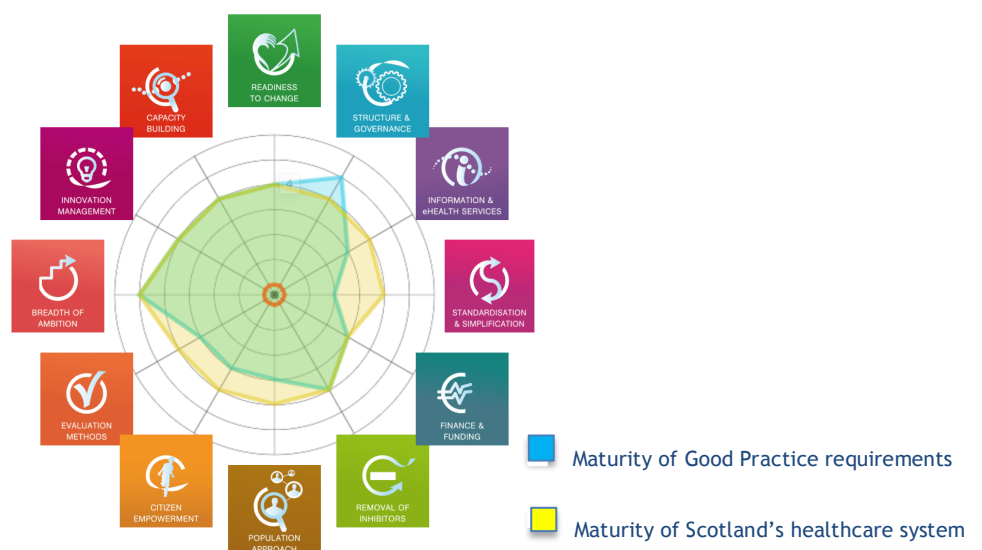

- Maturity of Good Practice requirements
- Maturity of Scotland's healthcare system

Figure 3: Comparison of maturity requirements of Good Practice with maturity of Scotland's healthcare system

5.3 Feasibility of transferring the learning about Hospital@Home Good Practice to Scotland's local context

Dimension	Score Puglia	Feature(s) of the Good Practice	Score Scotland	Features of Scotland's healthcare system	Feasibility of the transfer and rationale
Readiness to Change	4	Leadership Good Practice implemented in line with general vision of policy-makers	3	Vision or plan embedded in policy Leaders and champions are emerging; Joint efforts towards change	Yes; the transferability is feasible with no need for major adaptation. Most of the features are already incorporated in Scotland's system. Some further work can be done around the engagement of clinical staff and ensure their stability, in most cases they move form project to project.
Structure & Governance	4	Roadmap for change programme Shared vision of stakeholders Organisational structure	4	Roadmap for a change programme defined and accepted by stakeholders involved; There is a structure and governance in place, governance is fully resourced at national level, but the messages do not go down in the same way and there are differences in local implementations.	Yes; the transferability is feasible with no need for major adaptation. Most of the features are already incorporated in Scotland's system. Some further work can be done around the improvement of implementation.
eHealth Services	3	Connection to national/regional platforms to allow information sharing. IT providers are central part of the service redesign and additional work such as maintenance of the service or training is part of the procurement.	2	There is a mandate and plan to deploy regional/national eHealth services across the healthcare system but not yet implemented. There are local solutions but there is no governance to upscale. The main barrier is the culture around the data sharing. Pilots are localised solutions in transition. However, there is continuing funding for initial pilots.	No; the transferability is not feasible; Scotland does not have an Electronic Health Record or national platform to connect all collected data. In addition, there is a difference in the procurement models.
Standardisation & Simplification	3	Connection to national/regional platforms to allow information sharing; no need for specific standards	1	Discussion of the necessity of ICT solutions to support integrated care and of any standards associated with that ICT is initiated; Existence of different standards for health and social care.	Yes; the transferability is feasible with some efforts: There are plans already in place regarding the creation of citizen portal and ensuring interoperability is a key standard

Dimension	Score Puglia	Feature(s) of the Good Practice	Score Scotland	Features of Scotland's healthcare system	Feasibility of the transfer and rationale
					in all new procurement. In addition, current Analogue to Digital agenda, development of national digital platform and Programme to put all NHS boards on Windows 10 and Microsoft 365 will further facilitate standardisation and simplification.
Funding	4	Maintenance of the services is part of the procurement to ensure sustainability	2	Consolidated innovation funding available through competitions/grants for individual care providers and small-scale implementation. A national Integrated Care Fund, some EU funding supporting integration and TEC funding available. Lack of resources to access the funding. Funding for the business as usual remains a continuous challenge.	No; the transferability is not feasible: Some improvement can be done about the business cases on how to support business as usual rather than pilots. However, there is quite a difference in procurement model of Puglia. The engagement with local suppliers would not be possible due to rigorous procurement and financial politics and previous legacy with platforms unable to support large scale deployment. There is currently tendency towards "One for Scotland" which means that even local suppliers need to bid in the procurement processes.
Removal of inhibitors	2	Readiness of healthcare professionals – GPs led clinics, minimal changes to their routine practice and familiarisation of professionals with ICS solutions	3	Implementation Plan and process for removing inhibitors have started being implemented locally; Investments to provide support for local agencies to implement new ways of working; innovation centres were created as part of the plan; Lot of training for different professions to change towards integration.	Yes; the transferability is feasible with lot of efforts; Recruitment of GPs remains a big challenge; there are few exceptions e.g. NHS Lanarkshire where GP practices are greatly involved, there is an on-going dialogue and "selling the story" approach with incentives and support in place. The introduction

Dimension	Score Puglia	Feature(s) of the Good Practice	Score Scotland	Features of Scotland's healthcare system	Feasibility of the transfer and rationale
					of new services/routine need to feel as "normal" rather than add-on. There is some potential in learning about NHS Lanarkshire approach and replicate it across Scotland.
Population Approach	3	Existence of risk stratification tools/approaches	2	Risk stratification approach is used in certain projects on experimental basis; SPARRA looks at responses through health and social care integration for patients who are at risk of re-admission.	Yes; the transferability is feasible with some efforts; Currently available risk stratification approaches and tools need to be adapted reflecting more home and mobile health monitoring aspect and prevention aspect.
Citizen Empowerment	3	Citizens driven service, there is a demand for the service; tools/incentives to support citizen empowerment	2	Lack of access of patients to health data; missing support for very frail patients; Lack of resources for coaching and training of citizens to embed the digital skills; Different level of implementation across health and social care partnerships	Yes; the transferability is feasible with lot of efforts. Some adaptation can be done around the following features: use of social media to increase citizen engagement (sometimes it requires the use of accessible technologies such as local TV and radio); increased resources for training/coaching of patients; improved access to health data and information.
Evaluation Methods	4	Systematic evaluation and data collection	2	Data collection remains an issue; there is a good degree of evaluation for the TEC programme, but results are not published; Lack of data that are connected hence resulting in poor quality of data; Resistance of healthcare professionals to share data; Unless there is a need for continuous investments, systematic evaluation is not performed.	Yes; the transferability is feasible with lot of efforts; Some improvement can be done around publishing of evaluation outcomes, even if data are published it is usually not on time which influences the development of future sustainability plans or business cases. There is also a need to improve connectivity and quality of data to be able to

Dimension	Score Puglia	Feature(s) of the Good Practice	Score Scotland	Features of Scotland's healthcare system	Feasibility of the transfer and rationale
					demonstrate the value and impact of the intervention and make people trusting the data. The resistance of healthcare professionals to share data needs to be better addressed as well.
Breadth of Ambition	3	Integration across primary and hospital care	4	Improved coordination of social care services and healthcare needs; Ambition of the full integration of health and social care; Integrated budget and integrated governance.	Yes; the transferability is feasible with no need for major adaptation. The ambition of Scotland is full health and social care integration which is embedded in the legislation on integrated care.
Innovation Management	3	Change of approach embedded in policy	3	New Digital Healthcare Strategy provides the policy umbrella for innovation in Scotland; different level of innovation initiatives across Scotland but not joined-up; need to clarify and align the innovation priorities	Yes; the transferability is feasible with no need for major adaptation. Some improvement can be done around supporting the collaboration for innovation; e.g. through improved involvement of ICT providers in the system re-design, joining-up the innovation initiatives; New Digital Healthcare Strategy should provide the basis for improved coordination and alignment of innovation activities.
Capacity Building	3	Training of healthcare professionals	3	There is a recognised need for the training and capacity-building around the digital skills; open culture of learning and sharing via different mechanisms; e.g. Learning Network, Digital Healthcare Week and other.	Yes; the transferability is feasible with no need for major adaptation. Some improvement can be done in increasing the resources for capacity-building; we need to continue supporting the culture of open learning and sharing of experience both at national and European level.

5.4   Priority areas for the transferability of learning

Receiving region: List of the prioritised features to be considered for the transferability of learning about Hospital@Home Good Practice to Scotland's local context is outlined in the Table below:

List of the prioritised features of the Hospital@Home Good Practice
Removal of inhibitors • Engagement and recruitment of GPs Citizen empowerment • Citizens driven service, there is a demand for the service • Tools/incentives to support citizen empowerment Evaluation Methods • Systematic evaluation and data collection

6.   Adaptation of local environment to enable transferability of learning

Receiving region: List of suggested changes to enable the creation of conditions for the adoption of learning about Hospital@Home Good Practice to Scotland's local context is outlined in the Table below:

Features of the Good Practice	Adaptation of the features in Scotland
Removal of inhibitors • Engagement and recruitment of GPs	• Improve flexibility of engaging with GPs on the individual basis; there is no "one size fits all approach" • Encourage learning about the ways of how to engage with GPs and promote good practices nationally and beyond to facilitate scaling-up of successful stories.
Citizen empowerment • Citizens driven service • Tools/incentives to support citizen empowerment	• Increase public awareness about the benefits of technology enabled care solutions and promote active participation of citizens in the prevention, self-care and management of their care through the education • Embed the education about the importance of citizen empowerment and active participation in schools' curricula • Adapt the language to your targeted audience
Evaluation Methods • Systematic evaluation and data collection	• Improve publishing of evaluation data and demonstrate the impact • Improve real-data collection

7. Priority actions to enable conditions for the transferability of learning

Receiving region: List of the proposed actions to enable conditions for the adoption of learning about Hospital@Home Good Practice to Scotland's local context, including objectives, anticipated outcomes and policy implications is outlined in the Table below:

Priority Action	Objective of the Action	Anticipated outcomes	Policy implications, including the responsible actor and anticipated duration
Engagement with GPs	The objective of this action is to increase the engagement of GPs in the delivery of technology enabled care solutions, promoting the real benefits and opportunities of these solutions.	Increased recruitment of GPs and their readiness to implement technology enabled care solutions	Policy implications: • Digital Health and Social Care Strategy (2018)3 which outlines how Scotland will use technology to reshape and improve services, support person-centred care and improved efficiency of care. There is high level commitment to citizen empowerment and support of independent living through the digital means. • Health and Social Care Delivery Plan4 aims to further enhance health and social care services which are integrated; focus on prevention, anticipation and supported self-management; will make day-case treatment the norm, where hospital treatment is required; and ensure people get back into their home or community environment as soon as appropriate, with minimum risk of re-admission. • Technology Enabled Care Programme5is a Scotland-wide programme designed to significantly increase citizen choice and control in health, well-being and care services. • Strategy for Primary Care6which focuses on the modernisation of primary care and multidisciplinary team working, to reduce pressures on services and ensure improved outcomes for patients with access to the right professional, at the right time, as near to home as possible.
Public awareness and engagement of citizens in service redesign	The objective of this action is to organise and promote awareness-raising sessions about the benefits of active engagement of citizens in the service redesign. This includes engagement with educational sector and embedment of the citizen empowerment in teaching's curricula.	Increased awareness and participation of winder public in the service redesign, prevention and management of care	
Systematic evaluation and data collection	The objective of this action is to support publishing of evaluation data in the right time in order to demonstrate the value and impact of	Availability of robust business models informed by the real-time data	Responsible actors: • Health and Social Care Integration Directorate of Scottish Government • Technology Enabled Care and Digital Healthcare Innovation Division of Scottish Government

3 Scotland's Digital Heath and Social Care Strategy - https://www.gov.scot/publications/scotlands-digital-health-care-strategy-enabling-connecting-empowering/
4 Health and Social Care Delivery Plan - https://www.gov.scot/publications/health-social-care-delivery-plan/
5 Technology Enabled Care Programme - https://www.digihealthcare.scot/home/resources/technology-enabled-care-tec/
6 Primary care reform - https://www2.gov.scot/Topics/Health/Services/Primary-Care/Strategy-or-Primary-Care

Priority Action	Objective of the Action	Anticipated outcomes	Policy implications, including the responsible actor and anticipated duration
	technology enabled care services. This also includes the quality of data collection in the real-life settings and better use of data collection infrastructure.		- Health and Social Care Partnerships - Integration Joint Boards - NHS NSS – Information Service Division - NHS Education for Scotland - Innovation centres - Improvement Scotland - eHealth Leads, clinical champions and TEC leads at local level Anticipated duration: 2019-2023

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