



ACTION PLAN FOR LIVERPOOL CITY REGION

November 2019











Introduction

ITHACA is an INTERREG Europe project involving nine European Regions working together to improve regional policies and practice on smart health and care through mutual exchange of information and good practices. Regions share an ambition to advance the scaling up of smart health and care innovation, which can ensure more sustainable health and care systems and improved wellbeing of European citizens. Central to the project is enhancing cooperation between diverse stakeholders and partners exchanging good practices by providing a platform for continued mutual learning, peer assessment and knowledge transfer.

This action plan focuses on introducing in Liverpool a new hospital-driven telehealth supported service for patients discharged from hospital. It is inspired by good practice exemplars from Slovenia that were showcased during the ITHACA project. Delivery of this action plan will contribute to add value to the implementation and impact of the “*One Liverpool*” Strategy and NHS Liverpool Clinical Commissioning Group’s (LCCG) new *Digital Health Strategy*. These policy instruments are the appropriate policy target rather than the original ITHACA policy instrument: the *EU Structural and Investment Funds Strategy 2014 to 2020 for Liverpool City Region*. This is because the new service will be financed from resources other than structural fund resources which have already been fully allocated, and so it cannot be confirmed that the action plan will have direct impact on the original policy instrument. Nevertheless, it is important to emphasise that the new project under this Action Plan aligns fully with the original policy instrument and will add value to its implementation and enhance its impact.

This action plan describes the new telehealth service that will be delivered in Liverpool, how it will contribute to the delivery of relevant policies and strategies, where the inspiration for the project has come from, the specific steps that stakeholders will take to ensure a successful outcome and how it will be financed.

-  Province of Noord-Brabant
-  Region Zeeland
-  University of Ljubljana
-  Friuli Venezia Giulia Autonomous Region
-  NHS Liverpool Clinical Commissioning Group

-  GIP Autonom'lab
-  Basque Foundation for Health Innovation and Research
-  Malopolska Region

Part I - General Information

Project: InnovaTion in Health And Care for All (ITHACA)

Partner organisation(s) concerned: NHS Liverpool Clinical Commissioning Group

Country: United Kingdom

NUTS2 region: Merseyside UKD7

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Part II - Policy Context

The Action Plan aims to impact: Other regional development policy instrument

Policy instrument addressed: “One Liverpool Strategy” and “LCCG Digital Health Strategy”

Overview of the policy context

During the ITHACA project period, several key documents provided the strategic and policy framework for Liverpool City Region’s agenda for innovation in health, care and well-being. Importantly, these have mirrored the “triple win” ambitions of the European Innovation Partnership for Active and Healthy Ageing (EIP AHA).

First, the *EU Structural and Investment Funds Strategy 2014 to 2020 for Liverpool City Region* – the policy instrument initially addressed by ITHACA - set out how the City Region should spend its EU funding allocation. It prioritised 5 portfolios – including an innovation economy portfolio that allocated €26.5m of ERDF and €5m of ESF resources. Within this portfolio, key actions included:

- a) creating the physical and organisational conditions to support smart specialisation priorities and innovation;
- b) boosting the application of knowledge and innovation. The accompanying innovation plan – *the Liverpool City Region Innovation Plan 2014-2020* - put more flesh on the focus of activity. It incorporated health, care and well-being as a priority within its smart specialisation focus and has shaped the deployment of structural funds in Liverpool City Region.

Building Our Future (The Liverpool City Region Growth Strategy), built on these key documents and reinforced the region’s priority to expand its smart health economy. It incorporated a strategic delivery programme, focusing on the design, delivery and scaling of smart health and care solutions – including assistive technology. It set out a regional vision to build on “core strengths and capacity for innovation to create a truly global and competitive City Region”. It explicitly prioritised growth sectors in:

- a) **Health and Life Sciences** embracing a focus on independent living and eHealth – identifying specific opportunities in community care and self-care;
- b) **Digital and Creative** including a focus on cognitive computing, sensor technology and exploiting health and care related data to boost productivity across all sectors.

Within this context, NHS Liverpool Clinical Commissioning Group (LCCG), the ITHACA partner for Liverpool City Region and a key smart health eco-system stakeholder, has played a strategic and policy development role. Its *Healthy Liverpool* strategy and programme emphasised that innovation for health, care and well-being was a policy priority for Liverpool. Transforming service delivery “through a step-change in the use of digital technology and innovation” was and remains a key goal. This agenda will be continued and reinforced through the joint LCCG and Liverpool City Council, “*One Liverpool*” Strategy (the health and care element of LCR’s Regional Growth Strategy). It will embrace LCCG’s new *Digital Health Strategy* that aims to:

- (a) empower people to interact with the NHS and to self-manage their health, care and well-being via digital tools;
- (b) boost health and care service quality, efficiency and capability;
- (c) support and facilitate innovation, sustainable health and care services, regional economic development and high-value jobs;
- (d) improve the health and care system’s digital infrastructure.

How this Action Plan will add value to Liverpool City Region policies and strategies

Implementing this action plan will support all policies and strategies identified above. Crucially, it will contribute to delivering the current *One Liverpool* and *Digital Health Strategy* along with ITHACA’s primary goal of improving the implementation of Structural Fund policies whilst delivering the ambitions of the ITHACA project to “accelerate the scaling up of smart health and care innovation that can support active and healthy living.”

The action will utilise two Slovenian good practices highlighted during the ITHACA project - General Hospital Slovenj Gradec’s, ***CEZAR centre for telehealth (telemedicine) services*** good practice and Telehealth Slovenia’s ***EcoSmart: Smart system of integrated health care and home care*** good practice (see part III). Inspired by and adopting learning from these good practice exemplars, this action plan focuses on introducing a new dimension and greater scale to “smart health and care” in Liverpool and, in particular, introducing to the City Region a new technology supported service (telehealth) for patients discharged from hospital and/or being supported in the community. The activity that will flow from it will add a new and distinctive dimension to existing activity and support the healthcare sector, for the first time, to:

- facilitate more timely discharges from acute, secondary care hospitals;

- reduce the average length of stay in hospital and reduce frequency of readmissions to hospital;
- enhance the frequency and convenience of post-discharge patient monitoring;
- support community-based treatment for discharged patients;
- contribute to regional policy goals to widen technology deployment purposes and increase the use of innovative technology.

To exploit economies of scale and service integration, this new service will be aligned to an existing service which includes a clinically staffed, remote “digital health hub” in Liverpool that supports patients, families and health/care practitioners. This hub is responsible for daily monitoring and case management of patients.

The introduction of the new CEZAR and EcoSmart inspired service, by adding a new dimension to the focus of Liverpool’s remote telemetry service and boosting its scale through this new service, will enhance the impact of the City Region’s key policy instruments. Firstly, it will add value to the *One Liverpool* and *LCCG Digital Health Strategies* and will be embedded in its actions to achieve their goals. Notably, the actions set out in this plan are an explicit part of the *Digital Health Strategy’s* focus on “Empowering People: Digital access to the NHS and digital tools to self-manage health, care and well-being” (**Theme A within the Digital Health Strategy**). In line with the strategy, it will deliver the strategic goal **to introduce new elements to the remote telemetry service including by “facilitating early discharge from hospital”**.

It will also support *One Liverpool* and *Digital Health strategy* ambitions to generate a paradigm shift in healthcare from:

- reactive to proactive treatment and continuous remote monitoring;
- passive patient/citizen to active and informed patient/citizen;
- focus on treatment to focus on prevention;
- patient dependence on institutional health care and home care to self-care and independent living.

Although all resources under the original policy instrument have been fully allocated and so the new project cannot be shown, under Interreg Europe requirements, to amount to an improvement in the policy instrument, the implementation of this Action Plan will also be part of and align with the three connected European and regional development policy instruments (*EU Structural and Investment Funds Strategy, the accompanying Liverpool City Region Innovation Plan [2014-2020] and the Liverpool City Region Growth Strategy, Building Our Future*) and support their specific policy goals (highlighted in bold below) by:

- linking secondary care, primary care and industry stakeholders to create an additional digital service and so **exploit the innovation opportunities within the healthcare sector (strategically identified as a growth sector for Liverpool City Region)**;
- providing new service elements to citizens that will speed up discharge from hospital and improve post-discharge care and so **address the threat of an ageing population with significant implications for public service resources - set out in the ESIF strategy**;¹
- expanding the use of proven technology supported service models and so **contribute to the exploitation of science, innovation and technology strengths and assets – one of five areas prioritised for EU investments through a focus on opportunities arising from health innovation**;²
- developing and deploying a new strand to Liverpool’s remote technology supported service and so **add to the innovation economy impact (portfolio 3), by addressing existing “economic advantage and connected diversification opportunities within Life Sciences, Healthcare and Bio-Medical areas”**;³
- utilising NHS LCCG resources to deliver a new service and so **exploit the NHS Clinical Commissioning Group assets (in terms of investment resources and digital expertise) to undertake initiatives that can support healthy and independent living underpinned by digital technology - as identified in the City Region Smart Specialisation Strategy**;⁴
- increasing the capacity of the remote telemetry service and enhancing its cost-effectiveness and so **driving innovation as a response to the trend, identified in the regional growth strategy, of increasing demands on health and care services due to an ageing population**.⁵

In this way, this action plan will contribute directly to regional, national and European health and economic policies and imperatives to improve health and well-being, increase investment in health and care technology, support efforts to increase the population’s capacity to live independently for longer and help to make the health and care system more economically sustainable.

¹ *EU Structural and Investment Funds Strategy 2014 to 2020 for Liverpool City Region* p16

² *ibid*, p17

³ *ibid*, p28

⁴ Liverpool City Region Growth Strategy, p33

⁵ *ibid*, p33

Part III – Details of the Actions Envisaged

Name of the action: **Hospital-driven Telehealth for Discharged Patients: transferring learning from CEZAR and EcoSmart, Slovenian Good Practices**

1. Relevance to the project

Inspiration and Learning from Slovenian Good Practices and Exchange of Experience

Boosting partners' and stakeholders' learning and knowledge through Exchange of Experience and Peer Evaluation (EEPE) events was a core element of the ITHACA project. A delegation from Liverpool City Region participated in the EEPE organised and hosted by the ITHACA Slovenian partner in Ljubljana during October 2018. This comprehensive event demonstrated the approaches to innovation for active and healthy living being adopted in Slovenia in relation to regional development policies, implementation and performance, the innovation cycle (from invention through market testing/validation to scaling up) and enhancing ecosystems. The peer evaluation process also served to highlight good practices. Amongst a raft of valuable learning, two ITHACA good practices were particularly pertinent to and sparked interest amongst the Liverpool delegation. These were the Slovenian *CEZAR centre for telehealth (telemedicine) services* and the *EcoSmart smart system of integrated health care and home care*.

The CEZAR intervention provided evidence of effectiveness in the use of telehealth for patients discharged from hospital. Planning for the EcoSmart service demonstrated effective practices in recruiting hospital patients to utilise telehealth at home and to secure hospital-based health practitioner support to them. Taken together these elements of the good practices provide inspiration for Liverpool stakeholders to introduce an effective hospital-driven telehealth service.

Furthermore, bi-lateral dialogue and inter-regional exchange of experience about technology supported health and care aspirations between Liverpool City Region and Slovenia during the ITHACA Co-design Seminar in Krakow in June 2018, led to a mutual recognition of the potential benefits of sharing learning about each partner's respective experience. As a follow-up, there were telephone meetings and email correspondence involving experts, designers and commissioners of remote telemetry services from both Liverpool and Slovenia between July and October 2018. This led to remote telemetry experts from Liverpool City Region participating in a face-to-face, bi-lateral meeting with key stakeholders in Slovenia who are driving forward technology supported health services in their country.

Reflecting upon lessons learned from the CEZAR and EcoSmart good practices and from peer-to-peer engagement with Slovenian colleagues, as set out below, it became clear that the knowledge and experience that could be derived from CEZAR and EcoSmart could inspire and inform the creation of a new dimension and activity for the remote telemetry service in Liverpool City Region.

CEZAR: Model and evidence for Hospital-driven telehealth for discharged patients

The CEZAR telehealth service, delivered from the General Hospital Slovenj Gradec (GH-SG), in Carinthia region, was set up in 2014 as part of the European Project UNITED4HEALTH (Universal Solutions in Telemedicine Development for European Health Care). Since 2014, it has provided telemedicine support to monitor remotely and provide therapy for patients discharged from hospital with diabetes mellitus type 2 (DM2) or chronic heart failure (CHF) in their home environment.⁶

Some elements of the CEZAR service operate in a similar way to Liverpool's current telehealth service. Other elements, that will underpin the new dimension to Liverpool's activity, are different. This variation on a common base makes CEZAR's service particularly ripe for transfer to Liverpool. In Slovenia, the GH-SG recruits from its DM2 and CHF patients who are discharged from hospital but in Liverpool recruitment is made at primary care level. However, patients in both ITHACA regions self-measure their vital signs – in Slovenia's case, blood sugar is measured for DM2 patients and weight, blood pressure, heart rate and oxygenation for CHF patients. Equally, in both regions, patient data is automatically sent from the measuring device to the telehealth centre hub where a telehealth-dedicated, health professional is alerted if the data gives rise to concern. In such a situation, patients are asked for further information and to remeasure their vital signs. However, the next step in Slovenia contrasts with the Liverpool pathway. Under the CEZAR model, if a medical concern remains, the case is escalated to a GH-SG specialist who will decide on the appropriate action. Action options include advice, change in medication or treatment, visit to a GP or to a hospital clinic or emergency admission to hospital.

Evidence of the effectiveness of the CEZAR service makes a compelling case for its transferability and is central to why it is an inspiration for Liverpool City Region stakeholders. Peer-reviewed evaluation and analysis reinforces the case for making its adoption in Liverpool City Region the focus of this action plan. A study by Rudel et al (2016)⁷ showed that the

⁶ D. Rudel, C. Slemenik-Pušnik, M. Epešek-Lenart, S. Pušnik, Z. Balorda, J. Lavre, (2016) Telemedicine support to patients with chronic diseases for a better long-term control at home, *Zdrav Vestn.* 2016; 85:676–85.

⁷ D. Rudel, C. Slemenik-Pušnik, Z. Balorda, S. Pušnik, J. Lavre, M. Kladnik (2016) Reducing hospitalisation providing telemedicine support to CHF patients at home in Slovenia, *Global Telemedicine and eHealth Updates: Knowledge Resources.* 2016, 9:205-208.

control cohort was hospitalised for 316.7 days with CHF as the primary diagnose and only 73.8 days in the intervention cohort. Number of admissions was 46 in the control and 13 in the intervention group. This indicates that for heart failure patients, the level of hospitalisation was reduced by 70% annually and the average duration of hospital stay was reduced by 76%. In addition, CEZAR patients confirmed that the technology supported service model is well accepted by the patients.

EcoSmart: Smart system of integrated health care and home care

EcoSmart is a national solution that integrates telemedicine in the healthcare system with the objective to enable remote patient treatment and to establish a more holistic approach to patient care. It has run as a series of pilots that will continue until the end of 2019 but will be mainstreamed from 2020. The main objectives of the EcoSmart model include achieving remote treatment, early hospital discharge, reducing unnecessary hospitalisation, better treatment of patients at risk, better self-management of patients with stable chronic disease at home and better health outcomes. Importantly, from a Liverpool City Region perspective, EcoSmart's telehealth service is designed explicitly to support early discharge from hospital and reduce the frequency of readmission to hospital by detecting deterioration of a patient's clinical condition at an early stage.

Evidence from EcoSmart, as with CEZAR, demonstrates successful piloting of telehealth service for secondary care patients with CHF and also, in EcoSmart's case, for patients with COPD and asthma.

As observed above, two further inspirational learning and transferable aspects of EcoSmart's model, that will directly inform Liverpool's new activity to introduce a hospital-driven telehealth service for discharged patients, relate to:

- patient recruitment to telehealth;
- hospital-based, clinical buy-in to the service.

For the former, evidence from the EcoSmart pilot phase indicates that when clinicians/nurses who were already treating a patient introduced them to the telehealth service there were almost no drop-outs from the service. This was attributed to an already existing sense of trust that had built up between the patient and the healthcare staff and because the clinicians and nurses were continuing to treat – through the telehealth service - patients that they already knew. For the latter, clinicians had a close involvement in, and therefore a sense of ownership of, the design of the service. In practice, this resulted in adding ICT support onto existing processes to make them more reliable and efficient. Key to buy-in was making the service simple and practical for clinical staff and patients.

Peer-to-peer collaboration between Slovenia and Liverpool City Region stakeholders

The ongoing and fruitful, bi-lateral dialogue and inter-regional exchange of experience about technology supported health and care aspirations between Liverpool City Region and Slovenia stakeholders has had mutual benefits. There is a shared understanding that in both Liverpool and Slovenia, the health and care sector is facing similar challenges and patients are wanting more personalised treatment whilst technologies offer opportunities for developing new treatment processes and can facilitate the flow of information.

From Liverpool's perspective, key learning points were:

- increased understanding of the relationship between service model and technology with technology as an enabler, adding speed and scale to transformation;
- recognising that, in essence, this service model changes the nature of service and relationship between hospital practitioners and patients – it informs, educates, enables and monitors self-service and self-care;
- recognising that deployment of “innovation” is likely to require service re-design;
- recognising the requirement for strong clinical leadership (and champions);
- understanding patient cohorts – needs, expectations, assets and challenges;
- understanding the importance of staff engagement – understanding what drives them.

Slovenian and Liverpool stakeholders intend to continue mutual support during the implementation of their respective action plans

2. Nature of the Action

Synopsis of the Action

This action plan focuses on introducing a new dimension and greater scale to “smart health and care” in Liverpool City Region and, in particular, introducing to the City Region a new technology supported service (telehealth) for up to 100 patients with cancer undergoing:

- immunotherapy
- chemotherapy

to be “stepped down” and discharged from the Clatterbridge Cancer Centre NHS Trust (CCCT).

This will add a new and distinctive dimension to existing activity and support the healthcare sector, for the first time, to:

- enable an acute, secondary care hospital to support patients to self-manage their condition and its treatment more accurately and confidently with remote, technology supported information, education and other interventions;
- facilitate more timely discharges from hospital and reduce frequency of hospital visits;
- deploy telehealth technology to support cancer patients;
- reduce the average length of stay in hospital and reduce frequency of readmissions to hospital;
- enhance the frequency and convenience of post-discharge patient monitoring;
- support community-based treatment for discharged patients;
- contribute to regional policy goals to widen technology deployment purposes and increase the use of innovative technology.

To exploit economies of scale and service integration, this new service will be incorporated within existing, technology enabled services in Liverpool that support patients, their families and health/care practitioners using technology in citizens' homes.

An implementation steering group, chaired by NHS CCC, with representation from all stakeholders involved will be established at the outset. It will monitor the project's progress, make operational decisions and engender multi-stakeholder collaboration. It will meet in person every four months (more often if required) but will maintain more frequent communication through electronic means.

Specific Activities

Taking full account of the learning from Slovenian good practice exemplars and inter-regional, peer-to-peer collaboration, a series of integrated activities will be implemented. Goals, methods, outcomes and, where relevant, deliverables are set out below for actions related to (1) service development and implementation and (2) project governance and management.

Service development and implementation

Activity 1.1 Securing involvement of clinical and ICT teams at CCCT

Goals: Clinician agreement, engagement and support for the proposed action.

Method: Involving clinical teams in all stages of project development and implementation.

Outcome: Clinical lead agreed and appointed to steering group.

Activity 1.2 Agreeing scope and scale of new telehealth service

Goals: Clear service scope, agreed scale and achievable delivery milestones.

Method: Exchange of ideas and collaborative project-development through structured workshops and meetings.

Outcome: Project targets, milestones and timeline established.

Deliverable: Framework plan document.

Activity 1.3 Co-designing pathway and self-care content with end users (patients, families and clinicians)

Goals: Agreed service pathways, clear and accessible self-care content.

Method: Good practice and inclusive co-design methodology - incorporating structured and creative workshops and 1 to 1 sessions

Outcome: Defined operational pathway and appropriate self-care content along with strengthened patient influence on steering group.

Deliverable: (i) Technology supported self-care service pathway for discharging patients with cancer undergoing immunotherapy from hospital
(ii) Service content to support patients with cancer undergoing immunotherapy to self-manage their condition

Activity 1.4 Service testing, piloting and implementation

Goal: Implementation of effective telehealth service for discharging patients from hospital

Method: Phased introduction of service: initial testing, piloting, review and gradual scaling up.

Outcome: Hospital-driven telehealth service for discharged patients up and running.

Activity 1.5 Evaluation of service and impact

Goal: Robust assessment and understanding of service impact including upon earlier discharge, readmission frequency and hospitalisation days.

Method: Impact evaluation and knowledge sharing

Outcome: Understanding of service cost-effectiveness, recommendations for service improvement, data to inform future outcome-based commissioning and knowledge sharing resource.

Deliverable: Impact evaluation report

Project governance and management

Activity 2.1 Securing information, clinical and project governance sign-off

Goal: Formal programme sign-off between service commissioners (LCCG) and providers (CCCT and Docobo)

Method: Papers, presentations, negotiations and meetings in place

Outcome: Governance infrastructure in place

Deliverable: Governance agreement documentation

Activity 2.2 Steering Group

Goal: Multi-stakeholder forum in place to oversee effective project development and implementation

Method: Stakeholder representative recruitment and meetings for project monitoring, operational decision-making and multi-stakeholder collaboration.

Outcome: Strong project partnership with skills, knowledge and commitment to support service delivery

Deliverable: Steering group terms of reference, agendas and meeting minutes

Summary of deliverables related to this action

Deliverable 1.2 Telehealth and self-care service framework plan

Deliverable 1.3(i) Technology supported self-care service pathway for discharging patients with cancer from hospital

- Deliverable 1.3(ii)** Service content to support patients with cancer to self-manage their condition
- Deliverable 1.5** Impact evaluation report
- Deliverable 2.1** Governance agreement documentation
- Deliverable 2.2** Steering group terms of reference, agendas and meeting minutes

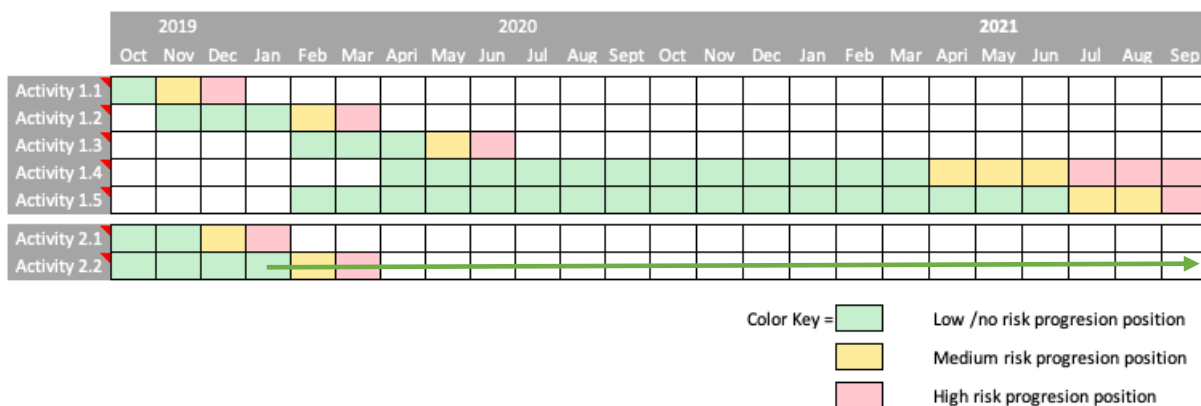
3. Stakeholders Involved

The stakeholders involved in developing and implementing this action and their primary role are:

- Project Executive (SRO): **Ernie Marshall** NHS CCC Deputy Executive Medical Director
- Senior User: **Dr Anna Olsson-Brown** NHS CCC Medical Oncology Registrar
- General Manager: **Frances Yip** NHS CCC General Manager for Chemotherapy Services.
- PMO Project Manager: **Kim McWaters** NHS CCC Service Improvement Facilitator
- IT Project Manager: **Vinnie Shuttleworth** NHS CCC
- Nursing Staff: **TBA** NHS CCC
- Technology Partner: **Caitlin Potter** Docobo Service Manager
- Commissioner: **Paul Clitheroe** NHS Liverpool CCG Programme Manager (*and ITHACA Action Plan lead*) & **Rachel Arvantis** NHS Liverpool CCG Macmillan Senior Project Manager

4. Timeframe

Figure 4.1: Action plan implementation timeline



The Gantt chart below sets out the anticipated timeline for the various activities described in this plan. It includes a buffer to allow for implementation risks that may cause delay.

5. Costs

Costs related to this action plan comprise fixed and marginal costs. Fixed costs comprise staff time, technology set up and configuration costs and evaluation fees. Marginal costs will vary according to the number of patients utilising the new service.

Fixed Costs:

(1) Total Action plan staff implementation costs are estimated as: **€103,215.**

Figure 4.2 below breaks down these costs by staff roles. The “% of staff member time” figure reflects the percentage whole time equivalent, for the respective staff member, spent upon implementing the activity set out in this action plan.

Figure 4.2: Action plan staffing implementation costs

Role	Stakeholder	Position	% Staff Member Time
Project Executive (SRO)	NHS CCC	Deputy Executive Medical Director	3
Senior User	NHS CCC	Medical Oncology Registrar	10
General Manager	NHS CCC	General Manager for Chemotherapy Services	15
PMO Project Manager	NHS CCC	Service Improvement Faciliator	30
IT Project Manager	NHS CCC		10
Nursing Staff	NHS CCC		10
Technology Partner	Docobo	Service Manager	15
Commissioning Manager	NHS LCCG	Programme Manager (& ITHACA Action Plan lead)	30
		Macmillan Senior Project Manager	15

(2) Docobo technology set up configuration costs for 100 patients:
€6,960 + VAT @ 20% **€ 8,352**

(3) Evaluation fees **€ 24,000**

(4) **TOTAL FIXED COSTS: €135,567**

Marginal Costs

In addition, there are marginal costs for equipment and monitoring that will vary according to the number of patients using the new service. Figure 4.3 below sets out these costs on a

per patient basis. Costs assume patients will use their own devices e.g. phone, tablet or desktop.

Figure 4.3: Technology Marginal Usage Costs

Technology Usage Unit Cost	Unit Cost €	VAT	Total €
1 x patients using simple Docobo “light touch” option (with CCC installing an app on the patient’s own phone)	5.80	1.16	6.96
1 x immunotherapy patient using Docobo for monitoring symptoms and alerting	18.79	3.76	22.55
1 x chemotherapy patient using Docobo for monitoring symptoms and alerting	18.79	3.76	22.55

On this basis, figure 4.4 indicates exemplars of marginal cost estimates for a range of variables:

Figure 4.4: Technology Marginal Usage Costs

Technology Usage	Patients using simple Docobo “light touch”	Patient using Docobo for monitoring symptoms and alerting	Total €
10 using each system (20 total)	69.60	225.5	295.1
20 using each system (40 total)	139.2	451	590.2
50 using each system (100 total)	348	1,127.5	1475.5

6. Funding Sources

Resources provided under the [original](#) ITHACA policy instrument - *EU Structural and Investment Funds Strategy 2014 to 2020 for Liverpool City Region* - have been fully allocated and so it will not be possible to utilise it for delivery of this action plan and the associated telehealth service.

Rather, implementation costs of the action plan are mainly covered by the NHS organisations involved in the delivery of each action and, in particular, NHS LCCG that is also the policy responsible organisation for the targeted policy instruments and has endorsed this action plan. Within the context of the *One Liverpool* and *Digital Health* strategies, evaluation of this activity will inform decision making about future commissioning and delivery models of the service set out in this plan.

Specifically:

- NHS LCCG will utilise its Digital Care and Innovation Budget for technology-related costs and relevant staff costs indicated in figure 4.2, 4.3 and 4.4
- NHS LCC will utilise its operating budget to cover all other staff costs set out in figure 4.2
- Evaluation fees will be funded via UK higher education funding

Part IV – Attestation

This ITHACA Action Plan is endorsed by the Managing Authority for Liverpool City Region and by NHS Liverpool Clinical Commissioning Group (PP5).

The Managing Authority is fully supportive of the proposed actions and confirm that it will add value to the three connected European and regional development policy instruments (*EU Structural and Investment Funds Strategy* (the stated policy instrument addressed by the ITHACA project), *the accompanying Liverpool City Region Innovation Plan [2014-2020]* and *the Liverpool City Region Growth Strategy, Building Our Future*) and support their specific policy goals.

Equally, PP5 commit to oversee the development and implementation of the Action Plan and confirm that it aligns with the *One Liverpool* and *LCCG Digital Health Strategy*.

Signatures of:

Managing Authority: **Liverpool City Region Local Enterprise Partnership**

Signed: _____ Date: _____

Name: _____ Position: _____

Action Plan Lead: **NHS Liverpool Clinical Commissioning Group**

Signed: _____ Date: _____

Name: **Dave Horsfield** Position: **Head of Transformation & Programmes**