Innovation Procurement in Health and Active Ageing – Our Experience!

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Mobile Assistance for Groups & Individuals within the Community – Stroke Rehabilitation

Horizon 2020 - PHC-27 PCP call – “Self-Management of Health & Disease & Patient Empowerment Supported by ICT”

http://magic-pcp.eu

This Project has received funding from the European Union’s Horizon 2020 Research and Innovation Programme under grant agreement No 687228
What is MAGIC?

MAGIC – Mobile Assistance for Groups & Individuals in the Community.

MAGIC is a European wide Pre-Commercial Procurement (PCP) focused upon creating innovative technology;

Transforming services for people post stroke to improve physical function and personal independence
Our Goal...

- To develop new, innovative technology based solutions that *improve* physical function and thus personal independence, within the first six months following the onset of stroke.
Our Consortium...
Our Buyers Group
What impact does MAGIC aim to achieve?

New cost effective solutions

Empower patients

Optimise recovery
How will MAGIC achieve this?

- **MAGIC Consortium**
- **Service User perspective**
- **Clinical advice/co-creation**
- **Trust Staff**
- **Supplier engagement**
- **External Experts**

**Buyers Group**

**Observer states**
Phases 1 & 2 Combined in SBRI

R&D / Pre-commercial Procurement (PCP)

Public Procurement of Innovative Solutions (PPI)

Phase 0
Curiosity Driven Research

Phase 1
Solution design
- Supplier A
- Supplier B
- Supplier C
- Supplier D

Phase 2
Prototype development
- Supplier B
- Supplier C
- Supplier D

Phase 3
Original development and testing of limited volume of 1st test products/services
- Supplier B
- Supplier C
- Supplier D

Phase 4
Deployment of commercial volumes of end-products
Wide diffusion of newly developed solutions
- Supplier(s) A, B, C, D and/or X

Phases 1 & 2 Combined in SBRI
Worldwide Interest...
This is the Procurement of Innovation...

Validation
- Exclusion Criteria, - Selection Criteria - Compliance Criteria

CAG Meeting

Voluntary standstill (in PCP)

Awarding contracts to ‘x’ number of Successful Companies

eTendersNI Website

The Call for Tender (CfT) Document

SBRI/ PCP Call for Tender

BSO Procurement Manager - Damien.Lavery@HSCNI.NET
Pre-Commercial Procurement (PCP) Process Map

1. Procurement Decision Process (Overview)

- Problem Identified
- Analysis & Investigation

**Solution not on the market or Severely Restricted**
- Pre-Commercial Procurement (PCP) (R&D Only)
- Innovation Partnership
- Direct Award Contract

**Pre-existing Solution Available**
- Existing Frameworks
- Open Tender - Open / Restricted
- Negotiated Tender - Competitive Dialogue, CPN
2. Pre-Commercial Procurement (PCP) Process Flow – Phase 1

- Step 1: Agree Procedure: Pre-Commercial Procurement (PCP) (R&D Only)
- Step 2: Preparation of Business Case & Project Brief
- Step 3: Preparation of Call for Tender (CfT) & Tender Documents
- Step 4: Publication of CfT on eTendersNI / Advertisement Period
- Step 5: CfT closes on eTendersNI / Tender Evaluation
- Step 6: Contract Award (Phase 1)
- Step 7: Contract Management (Phase 1)
- Step 8: Phase 2
## EC fund 70% of MAGIC...

<table>
<thead>
<tr>
<th>Phase</th>
<th>Activity Description</th>
<th>Minimum Number Providers</th>
<th>Euro Innovation Award</th>
<th>Total</th>
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<tbody>
<tr>
<td>Phase 1</td>
<td>Solution development</td>
<td>7</td>
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<td>€420,000.00</td>
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<td>Phase 2</td>
<td>Prototyping</td>
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<td>€105,700.00</td>
<td>€422,800.00</td>
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<td>Phase 3</td>
<td>To scale trial by 3 suppliers in 2 EU States</td>
<td>3</td>
<td>€930,000.00</td>
<td>€2,790,000.00</td>
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<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>€3,632,800.00</strong></td>
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</tbody>
</table>

In PCP Project MAGIC the EU funds will directly & fully fund the PCP-Costs.
What has MAGIC completed to date?

**February 2017**
8 successful suppliers from across Europe were awarded MAGIC Phase 1 contracts to design solutions. All 8 suppliers were assigned a Go-To Clinician in a Northern Ireland Trust and in Italy for their expertise to assist in prototype design.

**June 2017**
Suppliers showcased their final Phase 1 solutions to the Buyers Group and Italian Clinicians in Chieti, Italy.

**November 2017**
4 of the 8 Phase 1 suppliers were awarded a Phase 2 contract and started prototype development:

- AppAttic
- CAMLIN
- Corehab
- Tech4Care

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**Buyers Group**
- Business Services Organisation
- Health and Social Care Board
- Public Health Agency
- UTA
- A.S.L. TO3
- OSPEDALI REENUTI

**Project support**
- Invest Northern Ireland
- Dublin City University
- Osakidetza
- LUXINNOVATION
- Agència de Qualitat i Avaluació Sanitàries de Catalunya
- Centre for Health & Technology

**Observer states**
- Project funded in the framework of Horizon 2020
  DG for Communications Networks, Content and Technology
  Sustainable and Secure Society - Health and Well-being

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**http://magic-pcp.eu/**
November 2017 - Suppliers started Phase 2 Prototype development. Each supplier was assigned a Go-To Clinician and a Trust Research Manager for advice with trial planning.

April 2018 - Suppliers showcase Phase 2 solutions in Chieti, Italy to the Buyers Group and Clinicians

April 2018 - Phase 2 close

October 2018 - Phase 3 commence with 3 successful suppliers participating for 18-months. Feasibility Study/ to-scale field trial
PHASE 3 – Three Feasibility Studies

Each Study has One Zone in Northern Ireland & One Zone in Italy

Feasibility Studies have full Research Governance & Ethics Approval

Up to 150 participants per Zone – Potential for up to 900 Patients to Benefit

Clinician Involvement and Co-Creation

All 5 of the Northern Ireland Health and Social Care Trusts are equally involved

South Eastern Trust & Belfast Trust - Corehab
Northern Trust - Camlin
Southern & Western Trusts – Tech-4-Care
Camlin – ARC-Intellicare

ARC-Intellicare is a machine-learning-based wireless platform designed to work in a patient’s home in post-acute phase after stroke. ARC can address the specific rehabilitation needs of each patient, by allowing therapists to personalise rehabilitation routines, provide continuous monitoring and give performance feedback during both the exercise program and Activity of Daily Living (ADL). The main components are: wearable inertial sensors for upper, lower limb and postural monitoring, a tablet and a software platform, with a simple, gamified and straightforward usability. From October 2018 the ARCANGEL field trial to evaluate the feasibility, acceptability and usefulness of ARC during the rehabilitation program of Italian and Northern-Irish patients.
Corehab-WeReha

WeReha is an innovative medical device to rehabilitate stroke patients by using wearable sensors and biofeedback for total body exercises and “smart objects” for hand rehabilitation. The study will be evaluated in Northern Ireland and Italy with more than 100 stroke patients to assess their acceptance of technology and evaluate improvement in motor skills after 3 and 6 months of usage at home. Physiotherapists will train patients before discharge and follow progress at home through an easy to use web application. Outcome measures include percentage of patients using WeReha and their effective activity level, Barhel index, mRS and other validated scores will be used in the study.
The MAGIC-GLASS project aims to develop an innovative home rehabilitation solution for rehabilitation of stroke survivors. MAGIC-GLASS exploits the potential of augmented and virtual reality (AR / VR) for enabling the patient to perform optimal physical and cognitive rehabilitation at home, by means of serious games grounded on the mirror-therapy approach. In Phase 3, the MAGIC-GLASS project will have the main aim to test and evaluate a working prototype in clinical trials with stroke patients in both Italy and Northern Ireland. Study results will provide evidence about the feasibility, effectiveness and usability of the MAGIC-GLASS prototype.
The initiative has been successful, given the fact that all the proposed solutions seem to reflect the real functional needs of patients with stroke. Moreover, all the four devices seem to meet the requisites of Usability and Acceptability by subjects with motor and cognitive deficits, and of Sustainability, given their potential distribution in the retail market for home training. Some devices seem more suitable to foster patients’ motivation and motor relearning than others (maybe this is just my opinion, but the products that exploit immersive virtual reality could determine a greater and quicker impact on brain plasticity than the ones using wearable motion sensors). In order to help the assessors to understand the clinical impact of the proposed devices, it would be useful that each buyer tests all the solutions on the same group of subjects. I mean that, if different centers experiment different solutions, the outcome will likely be influenced also by individual variables of the different studied samples. If each center and each patient has the opportunity to train motor (cognitive) skills with all the devices (in consecutive time periods), the individual variables will be better controlled.
Was the MAGIC PCP what you thought it would be?

Sabrina - I had no previous experience. I learned by doing.

Emer - I though the project exceeded expectations in the area of engaging with provider and the concepts of co-design with end users. This level of partnership in the R&D process was a very strong point.
What did you learn by being part of a PCP?

Sabrina - To give voice to patients and caregivers not as "end users" but as main actors of the design in the healthcare sector

Emer - I learned a great deal about the challenges faced by SMEs in designing new products.
• How system constraints can make procurement in a public sector setting very challenging for suppliers.
• Culture GAP between public and private sectors, in that the public sector had to adjust to the rapid pace set by the PCP process and the milestones to be achieved by companies.
What did you dislike or found difficulty with?

Sabrina - The relationship with the administrative and legal staff in my organization caused by the absence of specific skills in the management of the PCP.

Emer - Within a huge system such as HSC NI it was difficult to conduct the volume of work required and maintain constant communication with stakeholders.

• Key stakeholders during design were users and clinicians whilst in Phase 3 Senior Trust Management needed to be wholly bought into the project.
• There was a sense that we could have spent more time getting full ‘buy-in’ for Executives sooner. However, this may not have been possible as they would only be interested at the point in the process where they would be required to actually interact.
• Info Tech Trust services found the timescales to enable tech deployment too challenging – Security, Data Access & GDPR
What did you dislike or found difficulty with?

**Lawyers & Procurement Managers:**

Colm - From my perspective there should perhaps be greater clarification on what is required to be in the contracts:

- There are some things that are essential to ensure the project remains complaint with procurement and state aid rules, but

- There are other elements where a certain amount of tailoring can be performed. There should be greater guidance on these different areas.

Damien - Two significant problems with the procurement:

- SME’s interpretation of the IPR discount when pricing
- Inability to adjust prices for later Phase CfT i.e. the SME’s were asked to price subsequent phases at time of initial bid and this was not good for suppliers or the procurers as too much is unknown in the pre-phase 1 stage when the technology is truly innovative.
What did you think was good?

Sabrina – The ‘Needs Profile’ as the challenge for the public-private partnership

Emer - It was really great to get stroke survivors and clinicians involved with innovation. This will be the first time many of our clinicians have been involved in technology development and they were very excited by it. The need for technological transformation to assist with bridging the GAP between workforce supply and demand remains just as crucial as it was at project inception. There is real hop that a procurable solution will be found by the end of the process.
What advice would you give to others thinking about using the PCP instrument?

Sabrina - Always gather the profile of needs of the challenge involving patients and caregivers for their experiential knowledge

Emer - Spend as much time as possible early in the process getting clear commitments from key decision makers in host organisations.
• If the providers of the services and trial sites are not in the Buyers Group this is extra important.
• Set aside a clear budget for dissemination and communication.
• Be mindful of cultural differences in international projects, these can be very positive and we have learned much through solving problems together as an international team.

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Any other thoughts?

Emer - Don’t underestimate the challenges involved in IT integration with public sector IT systems. Build this in to trail designs early and look for alternative solutions that do not require integration during the trial phases.
PCP Enabling Innovation in Health & Social Care
Northern Ireland & Italian Healthcare

• Driving targeted change to:-
  ◦ Address real & defined issues
  ◦ Help more service users with less resource … efficiency
  ◦ Be more effective
  ◦ Allow creativity to shine … co-creation between industry and frontline practitioners
  ◦ New solutions for a new era