

Good Practice template

- All Good Practices identified by an Interreg Europe project and reported in the progress reports have to be submitted to the Programme.
- In order to submit a practice, you will have to register in the Interreg Europe website. Online submission will be available the first semester of 2017.
- NB: in orange: 2 optional fields. All other fields are compulsory.

1. General information	
Title of the practice	<i>ETC – Research and Development of Tech Solutions for Home Caregivers</i>
Does this practice come from an Interreg Europe Project	YES

In case 'yes' is selected, the following sections appear:

Please select the project acronym	HOCARE
--	--------

Specific objective	<i>Drop-down list of the 6 specific objectives [Technical: In case a project is selected, the specific objective is automatically completed]</i>	
Main institution involved	Wowsystem	
Location of the practice	Country	PORTUGAL
	NUTS 1	Autonomous Region of Madeira
	NUTS 2	Autonomous Region of Madeira
	NUTS 3	Autonomous Region of Madeira

2. Detailed description	
Detailed information on the practice	<p><i>[1500 characters] Please provide information on the practice itself. In particular:</i></p> <ul style="list-style-type: none"> - <i>What is the problem addressed and the context which triggered the introduction of the practice?</i> - <i>How does the practice reach its objectives and how it is implemented?</i> - <i>Who are the main stakeholders and beneficiaries of the practice?</i> <p><i>The ETC project is a quasi-experimental study, in which it seeks to assess the added value arising for the mental health and well-being of informal caregivers of semi-dependent users, through the pre-assessment of the use of technological devices. wearables for remote monitoring of parameters associated with the physical and mental well-being of the person cared for and the caregiver, as well as the design of new technological experiences and adaptation and redesign of existing ones with a view to increasing the effectiveness and frequency of use of the same and, respective comparison and evaluation of the impact in the mental well-being of the informal caregiver.</i></p> <p><i>Therefore, the ETC project had the following specific objectives:</i></p>

O1: Assess the impact/effects of the use of digital remote monitoring devices on the mental health and psychological well-being of informal caregivers;

O2: Test the suitability of such devices and respective training protocols (packs) for their use, in response to the needs perceived by informal caregivers;

O3: Based on the results of O1 and O2, idealize, design and develop new technological experiences for carers and caregivers, both from the software point of view (application of persuasive techniques or emotional design in the UI and UX) and from the point of view of the equipment (eg adding emotional elements in the design of the equipment itself – eg a photo of the grandchild printed on the wearable's strap) with a view to increasing the frequency of use and consequent effectiveness in the caregiver's mental well-being;

O4: Reassess the impact/effects on mental health and psychological well-being of informal caregivers based on the use of these new experiences;

O5: Compare the results from the use of the pack in the experimental group with those in the control group.

Therefore, there are two strands/areas of research in this project:

a) First, the entire research and validation of the use of this type of assistive technology and its impact on informal caregivers (to date, studies have focused only on the person cared for) on their mental well-being;

b) The entire component of technological research and design, on how to make these types of equipment and software more appealing so that their daily usage grows and their effectiveness/utility, consequently, also increases.

In terms of project methodology, the population/sample under study consisted of informal caregivers of people who have difficulties in satisfying instrumental activities of daily living (IADL) and basic activities of daily living (BADL) and who are registered in the support services to the population of the Social Security Institute of the Autonomous Region of Madeira.

From the set of informal caregivers that are flagged (N) and after verifying the criteria defined for inclusion in the study sample, two groups with homogeneous characteristics were randomly formed, which will be identified as a quasi-experimental group (GE) and a control group (CG)

All caregivers participated in training regarding the use of the wearables to be tested, as well as some training regarding health and safety aspects that can be monitored in the person cared for and in themselves, through the use of this type of device.

There was then a phase to monitor the use of these wearables and assess its effectiveness.

Once this data was collected, it was analysed and the respective conclusions written. The stakeholder's software and hardware teams monitored this entire phase and, based on the conclusions of these first

	<p>tests, conceptualized, designed and developed the new assistance experiences.</p> <p>After the development of these mobile app prototypes, the process was be repeated and effectiveness was evaluated again and against the state of the art/wearables currently existing and tested in the 1st phase.</p> <p>The project was developed amid the Covid19 pandemic, this posed new challenges to the researchers and team. As the target users were people quite vulnerable to Covid19, the team thought about possible solutions to help them monitor and cope with the disease. The wearable used incorporated oximetry and ECG and some studies were already being done with it by combining the monitoring of hearth rate variability and spo2 during sleep in order to detect high variations on these parameters which would indicate a possible asymptomatic case of Covid19. The team added this feature to the app as well as a special section with information and useful contacts. During the trials, at least in one user it was detected these kind of signals but after testing it proved that it wasn't Covid19 but a lung infection. The user received medical treatment and is doing well. The Covid19 feature section was praised by users.</p>
<p>Resources needed</p>	<p>[300 characters] Please specify the amount of funding/financial resources used and/or the human resources required to set up and to run the practice.</p> <p>This GP requires the acquisition of several "Withings Scanwatch" wearables (around 300€/unit), a number that can vary according the target-population needed. An Android or iOS smartphone is also needed to operate the mobile app in conjunction with the wearable as well as internet connection at home of the caregivers. At last, a regular web host is needed to install the platform and webservices.</p> <p>A licensing fee may be needed for the main stakeholder to allow transfer although IDE-RAM can facilitate in this process.</p> <p>Overall, the "fixed" costs on hardware and server should be around 6.000€ (this will vary greatly according the number of home caregivers you wish to reach on own country). Licensing should not be over 10.000€/year</p>
<p>Timescale (start/end date)</p>	<p>e.g. June 2012 – May 2014/ongoing</p> <p>Project started 1st January 2020 and is expected to end April 2022.</p>
<p>Evidence of success (results achieved)</p>	<p>[500 characters] Why is this practice considered as good? Please provide factual evidence that demonstrates its success or failure (e.g. measurable outputs/results).</p> <p>More than 20 home caregivers were included on the prototype testing and their feelings towards the experience and stress was monitored. The majority (~86%) has considered that the wearable and the new mobile app have helped them cope with stress and better monitor their loved ones while away.</p> <p>Users found quite useful (77,5%) the feature to receive an automatic notification in case the platform detected any significant change in hearth rate, sleep, activity and oxygen.</p>

	<p>The Covid-19 asymptomatic test monitoring feature was also praised and rated as “good” (63%).</p> <p>Some users and caregivers needed a bit more time to get used to the wearable (>2 days, 33%) and daily usage but with the right support team and a couple of hours spent explaining how to use side-by-side, the whole testing group achieved to use the platform and wearable for more than 30 days (the total period of testing).</p> <p><i>The team managed to get several international scientific papers published with the outcome of the project too.</i></p> <p><i>The project also produced new materials to help caregivers on how to provide the best care to the loved ones. These materials were provided via the app and website.</i></p> <p>70% of users reported that they would likely continue to use the solution daily after the trials.</p>
<p>Difficulties encountered/ lessons learned</p>	<p><i>[300 characters] Please specify any difficulties encountered/lessons learned during the implementation of the practice.</i></p> <p><i>One of the main difficulties was the unforeseen Covid-19 pandemic. As the team was dealing with a quite vulnerable target population, the project suffered a bit of delay. Testing involved close contact between team and users and only when these were fully vaccinated could the team proceed with proper full testing.</i></p> <p><i>However, Covid also represented an opportunity to enhance the prototype. As the wearable manufacturer was also conducting trials regarding detection of Covid19 using the same wearable, the team introduced a specific Covid19 monitoring feature that could – potentially – detect asymptomatic cases.</i></p> <p><i>By registering the Heart Rate Variability during sleep combined with oximetry values during night, one could detect that “something” could be going-on if a significant variation was detected within the last 8 days by comparing those values patterns.</i></p> <p><i>Although no asymptomatic case was detected during the trials on ETC, at least in two users it was detected lung infections that were developing and were afterwards properly confirmed/diagnosed.</i></p>
<p>Potential for learning or transfer</p>	<p><i>[1000 characters] Please explain why you consider this practice (or some aspects of this practice) as being potentially interesting for other regions to learn from. This can be done e.g. through information on key success factors for a transfer or on, factors that can hamper a transfer. Information on transfer(s) that already took place can also be provided (if possible, specify the country, the region – NUTS 2 – and organisation to which the practice was transferred)</i></p> <p><i>[Technical: A good practice be edited throughout a project life time (e.g. to add information on the transfers that have occurred)]</i></p> <p><i>This Good Practice translated into new findings regarding how technology and the use of wearables and mobile apps can ease the burden that home caregivers suffer. The main stakeholder can provide and license the code behind the mobile apps and platform, allowing for an easy transfer. Translations can be easily prepared and added to the</i></p>



	platform, allowing other countries to implement and test this kind of solution. ETC
Further information	www.ajudaracuidar.com
Contact details <i>[Technical: the contact details will be visible only to "Policy Learning Platforms registered members"]</i>	
Name	Dr. Miguel Campos
Organisation	WOWSystems Lda.
Email	Miguel.campos@wowsystems.pt
Expert opinion	<i>[500 characters]</i> <i>[Technical: to be filled in by the Policy Learning Platforms experts]</i>

DRAFT