

DESIGN OF THE PILOT ACTION IN MITTELBURGENLAND

Deliverable D.T3.7.1

Version 1
June 2021





Table of contents

1. Monitoring Grid	2
1.1. Objectives of the experiment	3
1.2. Location and geographical information	4
1.3. Demographic information of the testing location	4
1.4. Alignment with strategic and policy visions (national, regional, local level)	5
1.5. Needs of the target population.....	5
1.6. Current services addressing target population needs - gaps and limitations	6
1.7. Partners involved and role in pilot	8
1.8. Technologies and technical solution	8
1.9. Use Cases and target users	8
1.10. Definition of local indicators	9
1.11. Procedures.....	12
1.11.1. Legal and ethical assessment	12
1.11.2. User recruitment and consent procedures	12
1.11.3. Procurement	12
1.11.4. Installation procedures	12
1.11.5. User training and support	13
1.11.6. Operation procedure	13
1.11.7. Termination procedure	13
1.11.8. Evaluation procedures	13
1.11.9. Data management procedures.....	14
1.12. Workflow diagram summarising the procedure	15
2. Monitoring Templates	16
2.1. Pilot progress assessment indicators	16
2.2. Progress on pilot preparation.....	16
2.2.1. Quantitative review (pilot preparation).....	16
2.2.2. Qualitative review (pilot preparation)	17
2.3. Progress on the installation	17
2.3.1. Quantitative review (installation)	17
2.3.2. Qualitative review (installation).....	18
2.4. Experiment running progress assessment indicators	18
2.4.1. Quantitative review (experiments running)	18
2.4.2. Qualitative review (experiments running)	18
3. Bibliography	19



Name of the digital tool	Monitoring Grid
Testing location	Burgenland
Lead partner	Samaritan Burgenland Department of Home Care, AT, PP8 Lead Partner in Testing
Involved partner	Brno University of Technology, CZ, PP2 Technical Partner

1. Monitoring Grid

The aim of the niCE-life project is “... by using key enabling technologies to prevent frailty, enhance quality of care and support their independent living, ...”¹ In view of this objective, the Monitoring Grid aims to monitor the state of health (both physical and mental) of older people in the home care setting and on a regular basis. In this way, any deterioration should be recognized in good time, targeted measures initiated, and complicated long-term consequences avoided. This should enable older people to live an independent life at home for as long as possible and to prevent frailty. To achieve this goal, the Monitoring Grid - a web application - was developed as a basis for weekly telephone calls, which should work as follows:

Trained staff call the elderly every week and enter the answers in the Monitoring Grid. In the course of working out the needs of the elderly in work package T1, it turned out that the residents not only want to be called, but also want to be able to call the monitoring team by themselves. To make this possible, the home emergency call already in use will be extended by a further button, namely the “service button”.

The home emergency call offered by the Samaritan Burgenland Department of Home Care therefore will have two active buttons, each of which has one function:

1. Contact option for rescue in the event of an emergency (= emergency button, current function)
2. Opportunity to contact the monitoring team to ask essential questions (= service button, new function)

The Monitoring Grid analyses the answers and shows the development of the health status in a line and spider diagram. In addition to this, nine possible combinations have been developed which should require closer observation. These so-called combinations consist of putting together different items and which, if they occur, can have serious consequences from a nursing / medical point of view for the concerned person. For example, if a person has a depression, lives alone and has no support (combination number 3) or if a person has diabetes and wound (combination number 6).

¹ Interreg Central Europe: niCE-life: Application Form, 2019, Version 2, page 2.



Possible combinations	
Consecutive number	Name
1	Fall
	Chronic diseases
	Hospital
2	Chronic pain
	Feeling bad
	No support
3	Depression
	Living alone
	No support
4	Medication
	Depression
	Chronic diseases
5	Chronic diseases
	No support
6	Diabetes
	Wounds
7	Visiting family doctor last week
	Fever
	Diabetes
	Chronic wounds
8	Chronic diseases
	No visit to the hospital
9	Chronic diseases
	Wounds
	Fever

Figure 1: Overview of the developed combinations

1.1. Objectives of the experiment

The main goal of this experiment is to verify the Monitoring Grid in practice in the long term. In order to achieve this goal, we have formulated the following subordinate evaluation goals, which are to be measured with the help of defined indicators. An overview of the goals and indicators can be found in Table 2.

- Monitoring Grid is easy to use
- Monitoring Grid is accepted by the interviewers
- Monitoring Grid is accepted by the interviewees
- Participation in the Monitoring Grid has a positive effect on quality of life of the elderly
- Participation in the Monitoring Grid has a positive effect on social isolation/ loneliness

From April to September three interviewers (one of them as a substitute) call at least ten (currently eleven ²) elderly people once a week. Thirteen elderly people have signed the declaration of consent in February 2021. One participant moved into a nursing home, another person wanted to end their participation for personal reasons. The development of the state of health is analysed with the Monitoring grid. At the same time, various questionnaires and feedback rounds evaluate the achievement of the above-mentioned goals.

² As of June 2021

1.2. Location and geographical information

The pilot testing will take place in Burgenland (NUTS Regions 111 + 112 + 113), Austria (see figure 1 - grey shaded area).



Figure 2: Burgenland is 1 of the 9 federal provinces in Austria³

Burgenland is one of the nine federal states of Austria. It is the easternmost and smallest in terms of its population. Burgenland covers an area of 3,965.20 km² and shares a 397 km long state border with Hungary for the most part and with Slovenia and Slovakia to a small extent. The landscape of Burgenland is divided into three regions (northern, central, and southern Burgenland), seven political districts, and two statutory cities Eisenstadt and Rust.⁴

1.3. Demographic information of the testing location

As of January 1st, 2020, Burgenland has 294,436 inhabitants. 65,485 (~ 22%) of them are older than 65 years. According to Statistics Austria, Burgenland and the population over the age of 65 years are continuing to grow. In 2030 around 27.6% of the population will be over 65 years old and in 2040 it will be already 31.6%.⁵ This development applies not only to Burgenland, but also to Austria:

The current development of a growing and aging population in Austria will continue in the future. On the one hand, migration gains of around 30,000 annually lead to an increase in population. On the other hand, in addition to the stagnating birth rate and increasing life expectancy, the strong birth cohorts, which are gradually changing into retirement age, are responsible for the aging process. According to this, the population of Austria will grow from 8.84 million (2018) by 7% to 9.43 million by 2040 and by 2080 finally by 12% to 9.93. The share of the population 65+ will increase from 18.8% (2018) to 29.3% (2080) in the next six decades.⁶

³ <https://www.oesterreich.com/de/staat/bundeslaender/burgenland>

⁴ <https://de.wikipedia.org/wiki/Burgenland>

⁵

https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/bevoelkerungsstruktur/bevoelkerung_nach_alter_geschlecht/index.html

⁶

https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/demographische_prognosen/bevoelkerungsprognosen/index.html#index1



1.4. Alignment with strategic and policy visions (national, regional, local level)

At the **national level**, the “Government Program 2020 - 2024” of the Austrian Federal Government places a special focus on the topic of prevention in the health care system and formulates a prevention strategy for Austria until 2024 in order to improve the personal health of every single Austrian. In addition, due to demographic developments, a fundamental reform of nursing care is being sought. Visions in this context include for example:

- Expansion of free and local advice on care and support for people in need of care and their relatives/ case management in questions of support offers, financing, legal issues; to design individual care and support arrangements
- As much as possible at home and outpatient - as much as necessary inpatient
- Use the opportunities of digitalisation

At the **regional level**, the “Burgenland Future Plan” also supports the desire of the older generation to stay at home for as long as possible in old age. To make this possible, the nursing services are also being expanded.

As can be seen here, the goals of the Monitoring Grid contribute to the realisation of the national and regional visions. With regular calls and constant monitoring of the state of health, the Monitoring Grid as a digital tool can help older people stay at home as long as possible.

1.5. Needs of the target population

Among other important needs, older people have great needs for social contacts, self-determination, and professional support.

Social isolation has a negative impact on physical and mental health of elderly. Social contact thus combats social isolation and thereby contribute to a healthy psychological and physical condition.

In addition to maintain social contacts, **self-determination** can also be classified as a dominant need. Among other things, self-determination means that they can make independent decisions on all issues affecting them. It is essential to weigh up self-determination and decision support. Residents do not want to be patronized. Supportive help to shape autonomy and self-determination is therefore becoming increasingly important. Skills should be preserved and supported.

For residents in assisted living homes and also for elderlies living at home it is particularly important that **professional support** is provided. Professional support conveys a subjective feeling of security. A supply of medication, medical aids, and regular contact with professionals (like general practitioners, care managers, care facilities) is important to the elderlies. In the event of an emergency, they want to be able to rely on quick help. But not only in the event of an emergency do the elderly and their relatives want to be sure of professional help. In everyday life, too, it is important for them to be able to take advantage of regular professional advice and precisely this advice is often not to be found when it is needed.

For the professionals, it is essential to ensure a healthy relationship between privacy and assistance. The seniors want community, but at the same time are very keen to continue to live out their personal freedom and habits without restrictions.



1.6. Current services addressing target population needs - gaps and limitations

The Monitoring Grid addresses people whose state of health allows them to live independently at home. Through regular contact by trained caregivers and the associated goal of maintaining independent life at home for as long as possible, an attempt is made to address the above-mentioned needs of social belonging, self-determination, and professional support.

Further services that are offered or to be planned for the next years in Austria and pursue the same aim are the following:

1. **Ambient Assisted Living (AAL)** is an area that deals with the use of information and communications technologies (ICT) that are intended to support the everyday life of older people or people with physical disabilities. Modern technologies should help to recognize a deterioration in the state of health as early as possible and thus support an independent, self-determined, and socially integrated life at home as long as possible. The possibilities of assistive technology are diverse and range from structural measures to intelligent but relatively simple technical aids (walking aids or automatic reminders to take medication) to more complex technical systems such as fall reporting systems. Internet portals with special services (memory training, food delivery, etc.) that are adapted to their needs can contribute to the social integration of older people. The products are mainly offered privately in Austria. Financing can be provided through possible subsidies, tax relief or as part of long-term care insurance.⁷
2. **HerzMobil Tirol** begins immediately after a hospital stay due to acute heart failure in order to get a better grip on the controllable triggers of a possible resumption of the patients. In addition to the optimization of drug therapy, the main goal is to improve the patient's own competence, the associated safe handling of the disease, and a better quality of life for patients and relatives. The patients are cared for by a multidisciplinary specialized team. Modern information technologies guarantee ongoing monitoring of the patients being cared for, which means that it is possible to react to certain developments at an early stage. The patient records health-related data with the help of a scale, blood pressure, and pulse monitor. Data is made available to the doctor with the help of the "Herzmobil App", which is installed on the mobile phone. On the basis of this data, the doctor can initiate appropriate therapeutic measures. HerzMobil Tirol is completely covered by the Tyrolean health insurance carriers for the majority of the insured. With some insurance companies, the usual low deductible is charged.⁸
3. **Advanced Practice Nurse (APN)** is an academically trained nurse who has completed an undergraduate Master of Science with focus on APN. This advanced training was introduced in Austria in 2018. The sub-roles include practitioner, expert, consultant, teacher, researcher, leader and representative. One of the practical competencies of an APN is to represent, promote, stand up for, and protect the interests of the individual, the affected family, and the community within the health systems and when setting the course for health policy. The most diverse professional disciplines are combined in order to work together on a special case and its treatment concept. The APN acts as a leader here.⁹ The APNs therefore devote themselves to certain patient groups, for example the care of patients with chronic wounds or in the rehabilitation area.¹⁰

⁷ <https://www.gesundheit.gv.at/leben/altern/wohnen-im-alter/ambient-assisted-living>

⁸ <https://www.liv.tirol/page.cfm?vpath=disease-management-programme/herzmobil-tirol>

⁹ <https://pflege-professionell.at/die-zukunft-der-advanced-practice-nurse-in-oesterreich>

¹⁰ https://de.wikipedia.org/wiki/Advanced_Practice_Nursing



4. **Community Health Nurses (CHN)** work mainly in primary care centres and act as health scripts by informing and connecting volunteers, doctors, associations, caregivers, and the community in a specific region.¹¹ They actively help people cope with their everyday lives and focus on preventing the need for care and promoting health.¹² The implementation of this concept in Austria is still very vague; the current government program offers the concrete possibility for piloting the model in 500 municipalities.¹³ The program, which is currently under development in Burgenland, is being financed through crowdfunding.¹⁴
5. **Case and Care Management (CCM)** is an approach that is characterized above all by the fact that a customized care package is collected, planned, implemented, coordinated, and evaluated along a care episode of a client and across the boundaries of care institutions, sectors, and professions.¹⁵ It is used in hospitals, rehabilitation facilities, nursing homes, and health insurance companies. The "Case Manager" looks after interfaces between doctors, nurses or therapists, and also to medical controlling and the IT departments, social services, and post-inpatient care as well as social support facilities. Resources and local support should be found.¹⁶

SERVICE	LIMITATIONS	IMPROVEMENT REALIZED BY MONITORING GRID
Ambient Assisted Living	<ul style="list-style-type: none"> Only health-related data (blood pressure, ...) 	<ul style="list-style-type: none"> Extensive data acquisition (health-related, functional, social) -> detailed anamnesis
HerzMobil Tirol	<ul style="list-style-type: none"> No active contact Limited communication 	<ul style="list-style-type: none"> Regular active contact
Advanced Practice Nurse (APN)	<ul style="list-style-type: none"> Lack of resources Often lack of detailed anamnesis 	<ul style="list-style-type: none"> A large number of elderly people can be reached through the means of communication "telephone"
Community Health Nurses	<ul style="list-style-type: none"> A limited number of older people can be reached 	<ul style="list-style-type: none"> Monitoring grid allows a detailed and very in-depth anamnesis
Case and Care Management	<ul style="list-style-type: none"> Constraints to the pandemic 	<ul style="list-style-type: none"> Good means of reaching large numbers of people during a pandemic

Table 1: Overview of current and planned services

The common feature of the above-mentioned measures is primarily that the focus is placed on health promotion and prevention. However, it must be noted that every concept has its strengths and weaknesses. In order to be able to offer health-promoting measures for the elderly population in the future, it is important that the concepts mentioned (including the monitoring grid) support one another.

¹¹ <https://community-health-nurse.at/>

¹² <https://pflege-professionell.at/cn>

¹³ <https://awblog.at/community-nursing/>

¹⁴ <http://www.lazarus.at/2020/12/29/neue-serie-teil-1-ihre-zukunft-als-community-health-nurse-in-oesterreich/>

¹⁵ http://oegcc.at/wp-content/uploads/2013/10/Grundlagenpapier_2016.pdf

¹⁶ https://de.wikipedia.org/wiki/Case_Manager

1.7. Partners involved and role in pilot

Samaritan Burgenland Department of Home Care (PP8), who takes on the role of Lead partner, will be responsible for

- Coordination and implementation of the planned actions
- Communication with and support of the participants
- Training and support of experts who will conduct the interviews
- Collection and analysis feedback from participants and experts
- Preparation of a summary report from the pilot action

Brno University of Technology (PP2), who is the supporting partner in testing, will be responsible for

- Technical adaptations and technical support of Austrian IT technician

1.8. Technologies and technical solution

The **Monitoring Grid** was implemented using platform independent technology based on JAVA platform and frameworks like Spring, Spring MVC. The resulting application runs as a web service and provides an interface for secure tracking health status of monitored subjects. Since the Monitoring Grid is a guide for telephone calls with older people, only the following technical equipment is required: connection to the internet and a phone for both, the interviewer and the interviewee.

The Monitoring Grid is supported by the **home emergency call**. The already existing home emergency call has been expanded by another button (= service button) as part of the project. This enables the participants to establish direct contact with the monitoring team.

1.9. Use Cases and target users

There will be three types of use cases, namely:

- **Project management** is responsible for coordination and implementation of the planned actions:
 - Contacting, engagement, and information of participants (including the preparation of written consents)
 - Preparation, implementation, and evaluation of the questionnaires
 - Training and support of the interviewers
 - Takeover of the administration activities in the context of the web application. He/ She will be able to create/ manage profiles of interviewers and interviewees. He/ She will take care of the system in terms of its functionality, security, management, etc. so that the interviewers can focus on conducting the interviews and analysing the data.
- **Interviewers**
 - Have an own account in the web application “Monitoring Grid”, where they can edit and evaluate the data of their assigned persons
 - Conduct the telephone interviews on a regular basis
 - Analyse the results
 - Initiate measures, if necessary
 - Report to the project management



- **Interviewees**

- Can have an own account in the web application “Monitoring Grid”, where they can see their own data
- Will be called by the interviewers every week
- Have the possibility to use the service button on the home emergency call
- Represent the target group (persons older than 75 years, who live in Burgenland and using the home emergency call (in the event they also want to contact the monitoring team))

1.10. Definition of local indicators

The following table gives an overview of the evaluation objectives.



Evaluation goal	Indicators	Measure	Target value	Measurement tool	Data collection timing	Concerned group
Monitoring Grid is easy to use	Usability on the part of the interviewers (KPI 1)	Percentage of experts and interviewers perceiving Monitoring Grid is easy to use	50%	Questionnaire: Developed by PP4 for the niCE-life project	Intermediate and exit questionnaire	Interviewer, Experts
Monitoring Grid is accepted by the interviewers	Technology acceptance on the part of the interviewers (KPI 2)	Percentage of experts and interviewers accepting the Monitoring Grid	50%	Questionnaire: Developed by PP4 for the niCE-life project	Intermediate and exit questionnaire	Interviewer, Experts
Monitoring Grid is accepted by the interviewees	Technology acceptance on the part of the interviewees (KPI 3)	Percentage of interviewees accepting the Monitoring Grid	50%	Questionnaire: Modified version of SUTAQ	Intermediate and exit questionnaire	Interviewees
Participation in the Monitoring Grid has a positive effect on quality of life of the elderly	Subjectively perceived quality of life (KPI 4)	Percentage of interviewees perceiving a positive effect on quality of life	Increase of 10%	Questionnaire: EQ-5D-3L	Input, intermediate and exit questionnaire	Interviewee
Participation in the Monitoring Grid has a positive effect on social isolation/ loneliness	Subjectively felt loneliness (KPI 5)	Percentage of interviewees perceiving a positive effect on loneliness	Increase of 10%	Questionnaire: Short version of UCLA Loneliness Scale	Input, intermediate and exit questionnaire	Interviewee

Table 2: Overview table of evaluation objectives

As can be seen in table 2, different questionnaires will be used for analysing the indicators listed above:

- **KP 1 and 2** addresses the interviewer and experts. A total of **3 interviewers** (2 conduct the interviews regularly, 1 other person acts as a substitute) and **2 experts**, who are very knowledgeable in this area, are asked. Questionnaire developed by PP4 for the niCE-life project is used to measure usability/ technology acceptance. Since the number of people surveyed is rather small and the individual ratings have a very strong impact on the overall rating, we assume a target value of 50% (=target value). The survey of the experts and the interviewer will be carried out in June/ July 2021 and at the end of the pilot in September/ October 2021.
- **KPI 3** addresses the **13 interviewees** (= number of people surveyed). Modified version of SUTAQ will be used to measure technology acceptance on the part of the interviewees. The questions will be asked in June/ July 2021 and in September/ October 2021 (intermediate and exit questionnaire). Since the number of people surveyed is rather small and the individual ratings have a very strong impact on the overall rating, we assume a target value of 50% (=target value)
- **KPI 4** addresses the **13 interviewees** (= number of people surveyed). The questionnaire proposed by the WPT3 leader (EQ-5D-3L) will be applied. The questions will be asked at the beginning of the pilot action in March/ April 2021 and in September/ October 2021 (input and exit questionnaire). An improvement of 10% is expected (= target value)
- **KPI 5** addresses the **13 interviewees** (= number of people surveyed). The questionnaire proposed by the WPT3 leader (Revised UCLA Loneliness Scale) will be applied (for target value and data collection timing, see KP 3). Since this version of the questionnaire is not available in the German language, we use a shortened but already used and checked version of this questionnaire for the analysis.

More information about the questionnaires is described in “3.7.5 Collection and analysis of feedback from test and support persons”.

The method to collect the feedback of the test persons depends on the Covid-19 situation in Austria: If the situation with the corona virus permits, a personal interview will be conducted. If a personal interview with the participants, the interviewers, and experts is not possible, the interviews will take place by phone or online.

The pilot action takes place in close cooperation with all persons involved (interviewer, interviewee, project management) and at regular intervals.

Regular meetings and feedback loops (personal, by phone, online) will be organized and implemented.

1.11. Procedures

In the following the procedures, which are relevant for the pilot action, will be described.

1.11.1. Legal and ethical assessment

The development of the project has been continuously coordinated with the legal department of the Samaritan Burgenland Department of Home Care: Above all, the General Data Protection Regulations (GDPR) are important to note. Therefore, extensive data protection information and a consent form have been drawn up. In addition, a data protection impact assessment for profiling has been created. Participation to the pilot is completely voluntary and subject to the signature of the consent.

1.11.2. User recruitment and consent procedures

The user recruitment has already started in August 2020. People who live in Burgenland, are over 75 years old and have a home emergency call, were informed by us by letter and asked to participate. In addition, some possible participants living in assisted living homes were contacted by phone. By December 2020, 13 people have agreed to take part in the project (at least 10 should take part according to the application form).

In February 2021 the elderlies were visited, informed, and trained. In addition, the home emergency call was expanded to include the service button. The signature for the prepared declarations of consent was obtained during these meetings, which is prerequisite for participating in the pilot.

Inclusion criteria: People who live in Burgenland, are over 75 years old, and if they would like to contact the Monitoring Team as well, who have a home emergency call.

Exclusion criteria: People who do not live in Burgenland, are younger than 75 years old, and who do not sign the declaration of consent.

1.11.3. Procurement

Nothing must be procured. For the implementation of the test phase only the developed web application with a connection to the internet, the existing home emergency call, and a telephone are necessary. These tools are all already available.

1.11.4. Installation procedures

The Monitoring Grid has been developed by the technical partner, Brno University of Technology (PP2), under instruction of the Samaritan Burgenland Department of Home Care. In December 2020, the application has been taken over by the IT department of the Samaritan Burgenland Department of Home Care, which will then take care of the application. However, in order to guarantee that the application runs smoothly, it is planned to conclude a maintenance contract with the Brno University of Technology. The extension of the home emergency call, namely the service button, was installed during initial meetings with participants. Great care was taken to ensure privacy during installation. Apart from programming of the home emergency call, nothing needs to be installed in the participant's homes.

1.11.5. User training and support

There will be regular training for the interviewers as well as for the people interviewed.

Initial meetings with the **interviewed people** was organised in February 2021. During these meetings, the participants were informed about the principles and benefits of the project, the possibility to get a user account in the frame of the Monitoring Grid, and asked for the signature on the informed consent. After the first interviews have been carried out, further meetings will be organized to get feedback from the interviewed people and train those who are interested to have their own user account. During all meetings, participants will also have the opportunity to ask questions.

The **interviewers** also received their first extensive training in March 2021, in which the web application and the evaluation options are explained. During the test phase, there will be further feedback rounds and training sessions at regular intervals.

In order to give the users the necessary support, the admin will be responsible for the implementation of the web application and the test phase.

1.11.6. Operation procedure

Trained staff call the elderly every week and enter their answers in the Monitoring Grid. This web application analyses the answers and shows the development of the health status in a line and spider diagram. In addition to this, nine possible combinations, for example “diabetes and wounds” or “depression, lives alone and person has no support” (for more information see 2.1.1) have been developed. If one or more of these combinations occurs, the interviewers should observe this more closely.

In order to give the interviewed persons the opportunity to contact the monitoring team, the Monitoring Grid shall be accompanied by an additional button of the home emergency call. In the course of working out the needs of the elderly in WP T1, it turned out that the residents not only want to be called, but also want to be able to call the monitoring team by themselves. To make this possible, the home emergency call already in use will be extended by a further button, namely the “service button”.

The home emergency call offered by the Samaritan Burgenland Department of Home Care therefore will have two active buttons, each of which has one function:

1. Contact option for rescue in the event of an emergency (= emergency button, current function)
2. Opportunity to contact the monitoring team to ask essential questions (= service button, new function)

1.11.7. Termination procedure

The interviews started in April 2021 and are expected to last until September 2021. As stated in the declaration of consent, the participants can leave the pilot at any time.

1.11.8. Evaluation procedures

Based on the objectives we have set 4 indicators (summarised in table 2) that will be used to evaluate the success of the pilot action.

1.11.9. Data management procedures

The web application and the data of the participants are stored on a server directly at the Samaritan Burgenland Department of Home Care. The pilot is technically supported by the IT department of the Samaritan Burgenland Department of Home Care as well as by the Brno University of Technology, which developed the web application for this project. In order to ensure data protection in accordance with GDPR, extensive documents, for example Data Protection Privacy Impact and consent forms, were created together with legal experts.



1.12. Workflow diagram summarising the procedure

Deliverables	Task	2021											
		1	2	3	4	5	6	7	8	9	10	11	12
D.T3.1.1	Preparing a draft of the pilot action												
D.T3.7.1	Design of the pilot action in Burgenland												
D.T3.1.2	Coordination of the pilot activities by the LP, regular meetings about progress, regular exchange of information												
D.T3.7.2	Engagement of min. 10 people who live in Burgenland and are older than 75 years, Initial meetings, explanations of principles and benefits of pilot action, Obtaining written consents of participants												
D.T3.7.3	Initial briefing of staff about scope, objectives and timeframe of the pilot actions, targeted trainings of test persons, care givers about tool to be tested												
D.T3.7.3	Report from briefing and training of test persons, home care givers and nurses												
D.T3.7.4	Installation of technical devices and applications in homes of participants in Burgenland												
D.T3.7.5	Collection and analysis of feedback from the test and support persons												
	Questionnaire: Usability on the part of the interviewers and experts												
	Questionnaire: Technology acceptance on the part of the interviewers and experts												
	Questionnaire: Technology acceptance on the part of the interviewees												
	Questionnaire: Subjectively perceived quality of life												
	Questionnaire: Subjectively felt loneliness												
D.T3.7.6	Summary report from the pilot action, Submit a report to PP5												

2. Monitoring Templates

In addition to the information listed below, two Excel templates have been prepared that summarize the most important facts and to facilitate the collection of the required data from all pilots. The first concerns data collection about the actual **Pilot status** (deployment and running progress). The second template summarises the main **Pilot targets** for the end of the project (for the pilot deployment and running); it is a subset of the first.

2.1. Pilot progress assessment indicators

Reporting per Pilot site.

Reporting period: FROM: 01/12/2020 TO: 30/06/2021

Reporting status at: 30/06/2021

	Status	Start/ End-date	
Pilot preparation	Started: x <input type="checkbox"/> YES <input type="checkbox"/> NO	01/08/2020	31/01/2021
Installation	Started: x <input type="checkbox"/> YES <input type="checkbox"/> NO	01/02/2021	28/02/2021
Experiment running	Started: x <input type="checkbox"/> YES <input type="checkbox"/> NO	29/04/2021	30/09/2021

2.2. Progress on pilot preparation

2.2.1. Quantitative review (pilot preparation)

Infrastructure:

- The web application, developed by the Brno University of Technology, was adopted by the Samaritan Burgenland Department of Home Care and is ready for the pilot.
- The home emergency calls were expanded to include the service button during the initial meetings in February 2021.

User recruitment

- 114 contacted persons
- 13 confirmed users (who meet the selection criteria and have signed consent forms)
- 0 excluded users (i.e. users that have signed the consent forms but do not meet the inclusion criteria)
- 0 confirmed facilities to participate in the pilot (e.g. houses, apartments, etc.): recruited seniors live in their homes

Organisational setup

- Status of the procedure for the installation of the solution:
 - to do ☐; draft version available ☐; full version available ☐; final version available x ☐
- Status of the data management procedure:
 - to do ☐; draft version available ☐; full version available ☐; final version available x ☐
- Procedure for training (training of the trainers and training of the users):
 - to do ☐; draft version available ☐; full version available ☐; final version available x ☐
- Status of the training material:
 - to do ☐; draft version available ☐; full version available ☐; final version available x ☐



- Procedure for operational support (help-desk, FAQs, management of incidents, communication with users etc.):
 - to do x ☐; draft version available ☐; full version available ☐; final version available ☐

Legal and data protection issues

- Consent forms aligned with GDPR: YES x ☒ No ☐; Don't know ☐
- Data protection officer: Not yet selected ☐; Selected but not officially appointed ☐ please state the name [...]; Officially appointed x ☒ please state the name Anita Spandl.
- Data policies aligned with GDPR requirements: YES x ☒; Partly ☐ please state % progress: [...] (100% = YES - full alignment); No ☐; Don't know ☐
- Approval of the project by Ethical Committee YES ☐ ; No x ☒; Don't know ☐

2.2.2. Qualitative review (pilot preparation)

The main focus of this initial phase was the recruitment of possible and suitable participants. The scepticism was initially very high. This is mainly due to the poor use and knowledge of technological tools on the part of the elderly. Therefore, it was not easy to find suitable participants. After detailed project information; however, 13 participants have been found by December 2020.

2.3. Progress on the installation

Since the Monitoring Grid is a web application that acts as a basis for weekly calls, no hard ware devices had to be installed in the homes of the elderlies for it. The web application which was developed by PP2 (Brno University of Technology), however, had to be installed in the system of the Samaritan Austria.¹⁷ This was done in February 2021.

The Monitoring Grid is supported by the Home Emergency Call. Participants of the pilot action are able to contact the monitoring team on their own. The so-called “service button” had to be activated on the devices that are already in use. 12 of the 13 participants have a Home emergency call in use. Therefore, 12 service-buttons were activated in February 2021.

2.3.1. Quantitative review (installation)

Technical installation

Monitoring Grid

- 1/1 tool was installed

Home Emergency Call

- 12/ 12 of total installations completed at private homes of the elderlies (1 participant does not have the home emergency call)
- 12/ 12 of devices installed (12 service buttons were added to the already available emergency button on the home emergency call devices)

Training

- 2/ 2 of training sessions completed
- 3/ 3 of interviewers received training (overall and per type of stakeholder and/or user group)
- 13/ 13 of interviewees received training and information

¹⁷ Samaritan Burgenland Department of Home Care is a subsidiary of Samaritan Austria. The IT, which is employed by the Samaritan Austria, is also responsible for the subsidiaries.

2.3.2. Qualitative review (installation)

The process of taking over the Monitoring Grid from the technical developer (PP2) went without any problems.

The service button on the Home Emergency Call was activated, which means that the service button was linked to the telephone number of the respective interviewer. After that the person responsible for the home emergency call tested the functionality. This was handled by actively pressing the service button and checking the connection between the home emergency call device and the interviewer. There were no problems with eleven of the twelve installed service buttons. With one emergency call device the connection could not be established. However, after consulting the manufacturer of the devices, the problem was solved.

2.4. Experiment running progress assessment indicators

Start date of experiment running:

- Not started yet ☐; Started x ☐ Please, indicate the date 29/04/2021.

2.4.1. Quantitative review (experiments running)

Users engagement (during the current reporting period)

- 2 drop-offs (compared to the number of confirmed users and the number of signed informed consents) -> personal reasons + move to a nursing home

Operational effectiveness

- 2 technical/ operational issues reported (The aim is to measure how the solution work)
 1. Interviewer authorizations had to be updated (April 2021)
 2. Registration was not possible (April 2021)
- Effectiveness in incidents management (% of issues solved, % partly addressed, % not solved)
 - 100% solved (April 2021)
- Average response time to technical/ operational issues: 1 week
- Average response time to end-user requests/ inquiries (in hours): So far there have been no requests from end users

2.4.2. Qualitative review (experiments running)

By and large, the start of the experiment went very well. After consulting the interviewers, the interviewees are very satisfied with the weekly calls. The interviewers are also very enthusiastic about the tool. They can already see many possible uses of how the information obtained can be used in further care.

3. Bibliography

- Das öffentliche Gesundheitsportal Österreichs. (2017, 11 20). *gesundheit.gv.at*. Retrieved from [https://www.gesundheit.gv.at/leben/altern/wohnen-im-alter/ambient-assisted-living#:~:text=Ambient%20Assisted%20Living%20\(AAL%2C%20auch,sollen%20%E2%80%93%20beispielsweise%20jenen%20von%20Seniorinnen](https://www.gesundheit.gv.at/leben/altern/wohnen-im-alter/ambient-assisted-living#:~:text=Ambient%20Assisted%20Living%20(AAL%2C%20auch,sollen%20%E2%80%93%20beispielsweise%20jenen%20von%20Seniorinnen)
- Eglseer, D. R. (n.d.). *Community Health Nurse*. Retrieved from <https://community-health-nurse.at/>
- Eglseer, D. R. (n.d.). *Lazarus Pflegenetzwerk*. Retrieved from Neue Serie - Teil 1: Ihre Zukunft als „Community Health Nurse“ in Österreich: <http://www.lazarus.at/2020/12/29/neue-serie-teil-1-ihre-zukunft-als-community-health-nurse-in-oesterreich/>
- Heidemarie Staflinger, K. L. (2020, 03 04). *A&W Blog*. Retrieved from <https://awblog.at/community-nursing/>
- Johannes Kepler Universität Linz (JKU), Institut für Digital Business. (n.d.). *Oesterreich.com*. Retrieved from <https://www.oesterreich.com/de/staat/bundeslaender/burgenland?highlight=WyJidXJnZW5sYW5kIl0=>
- Landesinstitut für integrierte Versorgung. (n.d.). *liv.tirol*. Retrieved from <https://www.liv.tirol/page.cfm?vpath=disease-management-programme/herzmobil-tirol>
- niCE-life, P. (2019). Application Form - CE1581 niCE-life - Version 2.
- Österreichische Gesellschaft für Case und Care Management. (2016). *Österreichische Gesellschaft für Case und Care Management*. Retrieved from Grundlagenpapier: http://oegcc.at/wp-content/uploads/2013/10/Grundlagenpapier_2016.pdf
- Schäfer, D. (2018, 06 25). *Pflege Professionell*. Retrieved from <https://pflege-professionell.at/die-zukunft-der-advanced-practice-nurse-in-oesterreich>
- Statistik Austria. (2020, 12 17). *statistik.at*. Retrieved from https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/demographische_prognosen/bevoelkerungsprognosen/index.html#index1
- Statistik Austria. (2021, 2 11). *statistik.at*. Retrieved from https://www.statistik.at/web_de/statistiken/menschen_und_gesellschaft/bevoelkerung/bevoelkerungsstruktur/bevoelkerung_nach_alter_geschlecht/index.html
- Wikimedia Foundation Inc. (2021, 04 10). *Wikipedia - Die freie Enzyklopädie*. Retrieved from Burgenland: <https://de.wikipedia.org/wiki/Burgenland>
- Wikimedia Foundation Inc. . (2020, 11 27). *Wikipedia - Die freie Enzyklopädie*. Retrieved from Case Manager: https://de.wikipedia.org/wiki/Case_Manager
- Wikimedia Foundation Inc. (2021, 04 7). *Wikipedia - Die freie Enzyklopädie*. Retrieved from Advanced Practice Nursing: https://de.wikipedia.org/wiki/Advanced_Practice_Nursing
- Wild, M. (2020, 04 19). *Pflege Professionell*. Retrieved from <https://pflege-professionell.at/cn>