European Innovation Partnership on Active and Healthy Ageing

ACTION GROUP A3 RENOVATED ACTION PLAN 2016-2018
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Executive summary

The A3 Action Group of the European Innovation Partnership on Active and Health Ageing (EIP on AHA) considers ageing an opportunity rather than a burden, and aims to prevent functional decline and frailty by accelerating the deployment of major innovations in the management of these states by all relevant stakeholders. The A3 Action Plan is grounded in the Strategic Implementation Plan (SIP) of the EIP on AHA, with the goal of increasing the healthy lifespan of EU citizens by 2 years by 2020.

The management of frailty requires multidisciplinary expertise for the complexity of the domains that underpin it. A3 partners focus on synergic approaches that can be integrated to prevent frailty and disability along the domains of:

- Food and Nutrition
- Physical Activity
- Frailty in general
- Functional decline
- Cognitive decline
- Caregivers.

Our activities are aimed towards the development, testing and implementation of new models, strategies and tools for health promotion, disease prevention, empowerment, self-care, community-based interventions and integrated care. A3 commitments impact different domains of frailty through several different approaches including assessments, interventions, follow-up of non-communicable chronic diseases, home care service provision, training for older adults and their carers. The A3 Frailty Decalogue provides a framework to support an integrated, whole system policy to the challenge of frailty, describing ten commitments to prevent, delay and manage the impact of frailty. For its open structure, its inclusive nature and vocation to benefit all EU citizens, the A3 AG is transforming synergies into large-scale activities, which support the encounter between local, regional, national and international stakeholders.

The reference documents of the A3 AG adhere to the following principles:

- Engagement: underwriting the Partnership and its criteria;
- Inclusiveness: open to all relevant actors and constituencies;
- Critical mass: mobilizing sufficient resources;
- Partnership: working together with other parties in the action;
- Delivery: timely delivery of agreed outcomes;
- Advocacy: inspiration and political support for all participants.

The renovated Action Plan is consistent with the founding principles of the EIP on AHA and its predecessor, the first Action Plan, in promoting connections between the different priority work areas and enablers. The Renovated Action Plan builds upon the work of all A3 partners and is structured in line with the collaborative, cross-cutting objectives of the A3 Decalogue for further synergistic work across all the AGs of the EIP on AHA and its reference sites.

The general objectives and the synergies represent the core areas of work of the renovated Action Plan and are intended in a dynamic and iterative way to be integrated with all future contributions from the partners. In this way we expect that the deliverables will contribute to create an age friendly society where health
and care systems prevent, postpone, detect and manage frailty, improving health outcomes, quality of life and sustainability of services. With this purpose, the A3 AG will take advantage of the tools that have been made available by the European Commission and the PROEIPAHA support action to identify, share and scale up good practices. These are at the heart of the renovated Action Plan.

**Background and context**

The European Commission (EC) has provided a clear guideline to frame the renovation of the existing Action Plans in the European Innovation Partnership on Active and Health Ageing (EIP on AHA) Strategic Implementation Plan (SIP) and Operational Plan.

The A3 Action Plan is grounded in the SIP of the EIP on AHA, which has at its center the goal of increasing the healthy lifespan of European Union (EU) citizens by 2 years by 2020 (1). A3 partners implemented a paradigm shift from reactive disease management to anticipatory prevention, integrated care and targeted interventions to prevent and manage frailty through a number of multifaceted commitments. The achievements of the group have been described in “The Action Group on Frailty Story 2012-2014” (2), and have been updated in the “State of Play” (3).

**Introduction to the Action Group and the Action Plan**

**The Action Group A3 on “Prevention of functional decline and frailty”**

The A3 Action group (AG) seeks to prevent functional decline and frailty through good practices (4) that bring together public and private stakeholders to accelerate the deployment of major innovations in the prevention and management of frailty. The group values older people and their contribution to society, empowering older adults and their communities through their involvement in design innovation and in the co-creation process.

**A3 Action Areas: Thematic focus**

The A3 Action Group is made up of 6 different, interconnected Action Areas (AAs) that include commitments focusing on different dimensions of frailty including:

- Food and Nutrition
- Physical Activity
- Frailty in general
- Functional decline
- Cognitive decline
- Caregivers

The management of frailty poses many challenges linked to the complexity of the domains that contribute to it and to the variability of their association (2). A3 AAs represent multidisciplinary clusters of expertise on frailty whose members share their diverse backgrounds and experience to identify common work to benefit older adults.
**Food and Nutrition**

Malnutrition is a key component of frailty (5) that can be prevented and managed effectively and sustainably. This AA or subgroup involves multiple stakeholders that joined forces to outline a common vision (6) of the food and nutritional approaches to frailty prevention and management. Their objective is to carry out coordinated, inter-sectorial, multi-modal interventions to approach food and nutrition-related determinants of frailty and improve the health condition and outcomes of older adults in Europe. The common vision that they developed focuses on an integrated nutritional approach, "Nutrilive", that is represented by a structured Screening -Assessment- Pyramid - Model (SAM-AP) where the stratification of the nutritional needs of older adults are linked to assessment, self-monitoring and interventions supported by innovative Information and Communication Technologies (ICT) (4). To date, partners have generated the scientific evidence that has been collected in a series of dedicated papers to manage malnutrition for active and healthy ageing with a lifecourse approach, (7-8-9), see the A3 bibliography.

**Frailty and Functional Decline**

Different approaches have been explored into how best to identify models and instruments to prevent/detect frailty in community-dwelling older adults (10), and to promote the involvement of healthcare professionals working in primary care such as General Practitioners (GPs) or community nurses (11). AG members have been linking the management of frail older adults into a seamless continuum from initial assessment to integrated care (12), characterizing the functional stage of each older adult to determine the prognosis and the best-tailored preventive and therapeutic interventions. The partners produced a number of papers where scientific evidences focus on frailty in midlife and beyond, that are listed in the A3 Bibliography.

The “Comprehensive Clinical Assessment for Aged Care”- InterRAI suite has been selected as the family of instruments most suitable for the detection and management of older adults at risk of frailty and functional decline. “Services and Health for Elderly in Long TERm care”- SHELTER; and “Identifying best practices for care-dependent elderly by Benchmarking Costs and outcomes of community care”- iBenC, two EU-funded projects, have been validating the home care and the nursing home tools within the InterRAI suite of instruments (13), producing data on the typology of clients and residents, and are being scaled up in different regional settings. Other EU-funded projects (“Feasibility and effectiveness of the implementation of programs to screen and manage frail older patients in different clinical settings”- FRAILCLINIC; “Utility of omic-based biomarkers in characterizing older individuals at risk for frailty, its progression to disability and general consequences to health and well-being” - The FRAILOMIC Initiative (14); and “Reference Sites Network for Prevention and Care of Frailty and Chronic Conditions in community dwelling persons of EU Countries” -SUNFRAIL) are currently evaluating the effectiveness of diagnostic and monitoring tools in different clinical and social settings. FRAILOMIC is assessing the role of “omics” (a field of study in biology ending in -omics) in improving the characterization of the risk, the diagnosis and the prognosis of frailty. SUNFRAIL aims at improving the identification, prevention and management of frailty in community dwelling persons.
(persons over 65 years in different EU regional settings. This will be achieved through the design and validation of an innovative, integrated model for the prevention and management of frailty on the basis of existing systems and services, to adopt/replicate the model/good practices in different European organisational contexts. The EU project “Frailty Management Optimisation through EIP on AHA Commitments and Utilisation of Stakeholders Input” (FOCUS) explores in detail the good practices of the EIP on AHA, analysing evidence for selecting the best indicators, concurrent feedback from stakeholders, and to generate guidelines and optimise partners performances in this AA. A new project: “Sarcopenia and physical frailty on older people: multicomponent treatment strategies” (SPRINTT), is also carrying out large-scale interventions to address frailty (15).

**Cognitive Decline**

Partners in this subgroup are implementing a sustainable, effective and integrated plan for cognitive decline, a dimension of frailty influencing all other facets (16-17-18-19). To date, partners have searched the scientific evidence and produced a position statement on mild cognitive impairment, and a series of papers dedicated to personalised medicine in midlife and beyond (16), included in A3 group bibliography. The translation of Information and Communication Technologies (ICT) into screening and interventions for cognitive impairment (“serious games”) is being developed to improve ICT literacy in older adults. Advances have also been made in the integration of databases from trans-national cohorts, on social, clinical, analytical and genetic information from different European Member States. Initial steps are aimed at improving the standard of education of the different professionals in the field of frailty, particularly cognitive frailty. Partners have been focusing on increasing awareness about Brain Science, Brain Health and Brain Research, validating in vitro results through the use of animal models of age-related neurodegenerative diseases (20). Surrogate markers of efficacy for proof-of-concept secondary prevention trials have been also derived. Partners have been working on a questionnaire to assess compensation (Multiple Choice Questions format), to be provided through an interactive Internet platform linked to training programs for older adults. Of note, this AA has been particularly active in addressing gender issues related to frailty.

**Physical Activity**

This AA aims to contribute to AHA by focusing on promoting physical activity and encouraging healthy behaviours towards exercise in older adults. The relevant topics include screening, monitoring and training. For each of these domains the group is developing or identifying, testing and implementing tools, methods and effective strategies (21-22-23-24). The group created a common vision on how physical activity can be defined and measured in older adults, giving some insight into future directions for promoting physical activity among older citizens at an EU level (25). A checklist of 10 important criteria has been developed to achieve this goal. In addition, this group has worked on the development of an interoperable, scalable ICT infrastructure to support screening, monitoring and trainings programs to encourage older adults to become more aware of their health status and support them in staying active. In the EU FP7-funded project “PERsonalised ICT Supported Service for Independent Living and Active Ageing” - PERSSILAA, the
infrastructural requirements for suitable educational packages are being developed and implemented to enable scaling-up. The scientific evidence generated by the partners is available in the A3 bibliography.

**Caregivers**

This AA focuses on the needs of caregivers of older adults with cognitive impairment, functional impairment and pre-frailty or frailty (26). For example the Community Assessment of Risk and Treatment Strategies (CARTS) project identifies community dwelling older adults at risk of adverse healthcare outcomes such as hospitalisation, institutionalisation and death. Uniquely it measures the ability of caregivers to manage this risk and proposes strategies to manage not only the older adults at risk but also ways to support caregivers. The CARTS project underlines the central role of informal caregivers in the management of frail patients. Further research will identify the social and economic aspects of frailty that are often neglected in assessment. This AA aims to improve the quality of life of older adults, and focuses on empowerment, education and improvement of service delivery linking different service areas, research and caregivers, along with palliative care. Of note, this subgroup has also has a focus on patients with dementia and their caregivers (i.e. those with cognitive frailty): a sub-population at high risk of frailty and functional decline. The scientific evidence generated to date has been collected in papers available in the A3 bibliography and includes end-of-life decision processes (27-28-29-30-31-32).

**The A3 approach**

The A3 AG approach aims to implement innovation that brings value to older people, while delivering long-term budgetary savings. The balance between prevention activities, service provision by hospital-based care and home-based services is heterogeneous across the EU. To shift the focus in favour of a more proactive model, change management is required across all areas from prevention to emergency and home care. A3 activities are aimed towards the development, testing and implementation of new models, strategies and tools for health promotion, disease prevention, empowerment, self-care, community-based interventions and integrated care. Our commitments have already generated a meaningful impact across different domains of frailty through activities that include assessments, interventions, follow-up of non-communicable chronic diseases, home care service provision, training for older adults and their carers for which support documentation is provided in Annex 1, and in the “State of Play” document A3 partners also contributed to an increase in the awareness about AHA through dissemination activities at local, regional, national and international levels.

**Activities and Common work**

**Activities**

*A detailed description of the activities is provided in Appendix 1: A3 Bibliography.*

**Screenings/Assessments**

A3 partners have been carrying out screenings/assessments throughout the EU, to evaluate pre-frailty and frailty in its different dimensions (nutritional, physical and
functional states, cognitive functioning, well-being, resilience, relationship networks, engagement in social and cultural activities, perceived health status, non-communicable chronic diseases, falls, bone mass density etc.). Screenings also focused on special frail subjects, such as people with Down Syndrome. New biomarkers are being validated for the early detection of frailty.

**Interventions carried out following assessment in older adults.**

In the context of A3 commitments, assessments have been carried out for pre-frailty and frailty, followed by ICT-supported tailored interventions. This work paved the ground for synergies and scaling up across the EIP on AHA. Assessment of cognitive decline, physical functioning and clinical status were followed by integrated frailty interventions. For example, dedicated social, cultural and literacy programs to prevent cognitive decline and train informal caregivers have been developed; clinical interventions on multi-morbidity have also been carried out targeting frail older women in metropolitan and rural settings.

**Follow up of non-communicable chronic diseases**

Non-communicable chronic diseases contribute to frailty in older adults. Improving the monitoring of specific sets of parameters positively influences health outcomes, reducing inter-current acute events. A3 partners are monitoring a significant number of older adults with approaches impacting overall health outcomes and reducing hospitalizations. It is expected that the scaling up of smart health services will contribute to sustainable improvements in general health services throughout the EU.

**Home care services**

Some subsets of frail older adults receive homecare services that can be integrated by innovative technologies. A3 partners have been involved in the provision of services that range from the monitoring of clinical parameters to home visits, support services and psychological assistance.

**Training and education of older adults**

Tackling health and ICT literacy gaps is pivotal to enable durable changes in lifestyle and to achieve sustainable AHA. A3 partners have been establishing training courses that involve older adults including topics such as healthy nutrition and lifestyles, food safety, disease prevention, using innovative learning tools to fill in the ICT literacy gaps among end-users (33). Literacy has been embedded with cognitive stimulation activities to train older adults in techniques to slow cognitive decline e.g. in those with mild cognitive impairment (“memory gyms”).

**Training of informal caregivers**

Frail older adults often pose challenges for caregivers, who provide informal care, and manage complex situations, which increases their own risk of frailty and adverse health outcomes. A3 partners are involved in providing training to informal caregivers.

**Common work**

The AG has developed a Frailty Decalogue (4) as a framework to support policy incorporating whole system responses to the challenge of frailty. The Decalogue
describes ten actions or commitments directed at Member States to prevent, delay and manage the impact of frailty:

1. Involve all stakeholders in raising awareness and advocacy about frailty
2. Empower older people to stay connected and participate as active citizens
3. Use technologies to enable independence, wellbeing and collaboration
4. Promote physical activity to maintain physical and cognitive function
5. Integrate assessment and personalized interventions to assess nutritional risk screening, improve nutritional intake and nutritional status
6. Identify people at increased risk of frailty and functional decline
7. Screen, prevent and offer support to people affected by cognitive decline
8. Deliver comprehensive assessment, rehabilitation and case management
9. Build workforce capability to deliver new models of integrated care
10. Invest in innovation, research, evaluation and knowledge transfer on frailty

Evidence, tools, guidelines and examples of good practices are available to support these actions (see Annex 1) and will be further developed through the Joint Action on frailty prevention. Adoption of the Frailty Decalogue by Member States will be a critical step towards active and healthy ageing across Europe.

Key messages and lessons learned

The integration of competences from various health and social streams raises several difficulties in establishing a common language i.e. turning teamwork into added value collaborative practice. Adding to the complexity is the need to share good practices and scale them up across different local contexts and indeed across the EU as a whole. The mutual learning between partners within the EIP on AHA has been pivotal to overcome this challenge. For its open structure, its inclusive nature and vocation to benefit all EU citizens, synergies between A3 partners are being transformed into large-scale activities. Importantly, A3 has supported the encounter between A3 organizations and local, regional, national and international stakeholders, essential in facilitating the alignment of objectives and strategies for active and healthy ageing.

Future activities

Some gaps have been identified, that might strengthen the impact of the partners’ activities if adequately addressed including:

1. Harmonisation of databases
2. Implementation of an common A3 scaled up vision on food, nutrition and frailty
3. Scaling up of good practices focusing on the exploitation of ICT tools
4. Educational activities to support the management of active and healthy ageing
5. Translation of knowledge into gains for each of the different stakeholders
6. Building bridges to other AGs
7. Funding opportunities
The Renovated Action Plan

Main traits

The Renovated Action Plan will build upon the deliverables of the A3 partners and on the impact of their work, taking advantage of their collective knowledge and good practices. This iterative approach will refine the content of the new action plan.

The experience of the A3 AG has highlighted the need for early involvement of different stakeholders in all activities aimed at AHA to ensure success and sustainability in scaling up good practices. The group will focus on common work and synergies between AAs, starting from individual commitments and across the different AGs. A more structured governance has been agreed, supportive of interdisciplinary work.

Activities to be carried out in synergy with the other AGs include:

- **Data harmonisation to enable hypothesis driven data analysis.** This will outline the trajectories of healthy aging, frailty and comorbidity.
- **Identification and scaling up of good practices** taking advantage of available interoperable and scalable ICT infrastructures and technologies.
- **Development and further scaling up of health and ICT literacy** for the empowerment of older adults, informal caregivers and professionals.
- Recognising and **taking advantage of the work done integrating the assessment and management of the cognitive, physical and nutritional domains of frailty**, to prevent and manage frailty and functional decline through more effective strategies.

Rationale

Relationship to reference sites and related documents

The A3 Action Plan is grounded in the SIP of the EIP on AHA, tackling the challenge of an ageing population and increasing the healthy lifespan of EU citizens by 2 years by 2020. The triple win for Europe will be: improving health and quality of life of older people, contributing to the sustainability and efficiency of care systems and creating growth and market opportunities for businesses.

The SIP is operationalised in the document “Taking forward the SIP”, highlighting specific actions to prioritize. The partners’ common work to prevent, delay and manage the impact of frailty is described in the “Decalogue on Frailty”.

The reference documents adhere to the following principles:

- **Engagement**: underwriting the Partnership and its criteria;
- **Inclusiveness**: open to all relevant actors and constituencies;
- **Critical mass**: mobilizing sufficient resources;
- **Partnership**: working together with other parties in the action;
- **Delivery**: timely delivery of agreed outcomes;
- **Advocacy**: inspiration and political support for all participants.

The Renovated Action Plan confirms its adhesion to the founding principles, recognizing the horizontal actions of the first Action Plan, and brings together
public and private stakeholders to accelerate the deployment of major innovations, undertaking supply and demand side measures across sectors and the entire innovation chain. Addressing frailty requires comprehensive work addressing a broad range of tasks, hence the AG structured the work in pillars closely linked to the previous Action Plan but differently organized. It is enriched by and built upon the work carried out during the last three years, and acknowledges the relevance of closely involving member states and regional and local authorities, for which it will structure a collaboration with the Reference Sites.

The A3 Renovated Action Plan aims to implement the SIP, according to a vision that is defined by an effective reduction and prevention of frailty in all its domains: cognitive, nutritional, physical, functional and sociocultural (including and involving formal and informal caregivers). This requires a strategy to increase the awareness of the problem of frailty and functional decline across Europe (professionals and society in general) and the creation of good practices that may be up scaled for use in different EU environments. The identification of the extra activities needed for the adoption of novel tools is critical for scaling up emerging new practices. Identifying ICT innovations and assessing the impact in terms of healthcare outcomes, cost, quality of life etc will be another priority area.

The A3 Renovated Action Plan and its activities are connected to the general objectives, on the basis of the priorities of the Decalogue. These cross-cutting objectives are synergic across A3 AAs and provide further opportunities for collaboration with the other AGs of the EIP on AHA and the reference sites.

The broad objectives of this renovated Action Plan are the core areas of work. To facilitate their implementation and the development of synergies the deliverables are organized accordingly. It must be reiterated that frailty is not an inevitable consequence of ageing. This is the message that lies at the heart of the Action Plan and indeed this Action Group and the EIP on AHA itself. Urgent action to design age friendly health and care systems that prevent, postpone, detect and manage frailty is critical to improve health outcomes, quality of life and sustainability of services. To tackle frailty across Europe, we need to understand the trajectories of ageing, the development of frailty, how to detect pre-frailty and identify the onset of frailty so that we can take early action to reduce functional decline. We must spread and scale up interventions that delay functional decline, reduce disability and future demand for long-term care. This practice will drive innovation and will inform the implementation of the planned Joint Action on Frailty Prevention.
Objectives

In agreement with the overall goals of the EIP on AHA, this AG aims to contribute to the development and implementation of sustainable multimodal interventions for the prevention and comprehensive management of functional/cognitive decline and frailty.

Taking into account the rationale for the development of the A3 AG and based on:

- The expertise and interests of the group expressed in their ideas for collaborative work,
- The objectives of the previous Action Plan
- The key messages and lessons learned
- The Decalogue,
- The inputs on common work collected so far,

several broad domain or subgroups have been identified to address the challenge of frailty and organize the work ahead. Our approach aims to potentiate the synergies between action areas.

A set of cross-cutting objectives will be pursued (General Objectives and Specific Objectives), across broad pillars on a three-year framework (Figure 1).

The general objectives of A3 integrate the different dimensions of frailty in a multidisciplinary and synergistic way.

A Harmonization of Data
B Identification of Good Practices
C Scaling-up of Good Practices
D Models of care for integrated management
E Identify and implement Enabling Technologies
F Dissemination and active involvement of the stakeholders
G Synergies to other Action Groups and Reference Sites

Figure 1. Matrix of the collaborative work pillars and of the general objectives
Collaborative Work

All A3 collaborative work is organized according to A3 Specific Objectives, which are nested within the Decalogue on Frailty. The collaborative work of the Decalogue on frailty spans along 4 activity pillars (Fig. 1), that are briefly outlined below, and described in further details, including specific objectives, in appendix 2.

1. Screening, monitoring and early diagnosis
1.1 Integrated assessment and personalised interventions to improve nutrition
1.2 Identification of people at increased risk of frailty and functional decline
1.3 Screen, prevent and offer support to people affected by cognitive decline

2. Prevention
2.1 Involve all stakeholders in raising awareness and advocacy about frailty
2.2 Empower older people to stay connected and participate as active citizens: ICT tools as enabler of social inclusion
2.3 Promote physical activity to maintain physical and cognitive function

3. Care and Cure
3.1 Deliver comprehensive assessment, rehabilitation and case management
3.2 Build workforce capability to deliver new models of integrated care

4. Research and Education
4.1 Invest in innovation, research, evaluation and knowledge transfer on frailty

General Objectives

A) Harmonization of data

One of the challenges of health service provision is to promote change from a fragmented to a harmonised and integrated system of data management. The underlying organizational change includes the use of defined minimum data sets and the development of agreed methodologies and tools for their creation, maintenance and improvement. Combining databases from multiple countries is needed to ensure that adequate care is provided throughout the EU irrespective of borders, as foreseen by the Crossborder Directive 2011/24/EU. A3 AG partners will compare practices, identify common needs and gaps in an effort to establish shared good practices that support harmonised approaches to data management.

To ensure that service provision planning is based on the actual needs of the population, links to Non Communicable Disease surveillance are required. It is also important to disseminate data relating social and health inequalities among older women and men to tackle gender inequalities. A3 partners will address these gaps by conducting evidence-based research, focused on identifying, validating and scaling up appropriate health and ageing related indicators, instruments, initiatives and statistical reference standards. Our future activities will be directed
towards the development of synergies with the EIP on AHA Reference Sites to facilitate the scaling up of large data initiatives good practices in AHA.

B) Identification of Good Practices

The European Commission supports the EIP on AHA directly, and through the PROEIPAH Coordination and Support Action it has developed a number of tools to facilitate the sharing of knowledge on existing work of the EIP on AHA. The tools support the categorization of the activities of the Partners, as well as their update and monitoring. A3 partners commit to the use of such tools in order to facilitate the identification and scaling up of good practices. These tools include:

- The Commitment Tracker;
- The Repository of Good Practices;
- The Monitoring and Assessment Framework of the EIP (MAFEIP).

The **Commitment Tracker** is dedicated to track the individual commitments, the collaborative work and synergies of the different AGs. This tool provides support to register, update and monitor the evolution of the different individual deliverables, that is pivotal to generate collaborative work and multidisciplinary synergies. It is accessible as an online tool for measuring the progress of EIP on AHA and will be updated by the partners.

The **Repository of Good Practices** is an online repository housing what is considered to be good or best practice relating to AHA related projects. It offers a set of essential functionalities within an open architecture, based upon the integration and maintenance of the existing repositories (of innovative practices). It is on Drupal (an online open source content management system) with a flexible and expandable interface, ensuring semantic consistency among existing repositories. Likewise, collaborative and basic publication tools, to allow AG members submit and describe (i.e. tag) different pieces of information, are integrated in the EIP on AHA portal. The resources in the Repository are aimed at both EIP on AHA partners and stakeholders outside of the Partnership, so members of the general public will have access to all information. The Repository foresees three types of innovative practices: Promising practice, Notable practice, Good practice, which depend upon the level of maturity of each practice. The idea and spirit of the Repository is to share information, increase its accessibility and foster connection and cooperation between stakeholders for scale-up.

The **Monitoring and Assessment Framework of the EIP (MAFEIP)** was developed by the Joint Research Centre - IPTS of the European Commission to monitor the activities carried out within the EIP on AHA (34). MAFEIP adopts a specific approach that is both flexible and consistent in the way its monitors and assesses the health and economic impact of stakeholders, commitments and regions. It is a generic and flexible web-based monitoring and assessment tool, which aims to establish a link between the results of monitoring and the EIP-AHA objectives: namely the Triple Win (quality of life; sustainability of health systems; innovation and growth) and the overall objective of increasing additional healthy life years of European citizens by two years by 2020. MAFEIP allows the synthesis of the best available information from multiple sources on a particular health technology. As a result of this synthesis, MAFEIP facilitates the early assessment of a technology before it has been clinically tested. MAFEIP provides an early
assessment of the likelihood that interventions (in their current design) will achieve the anticipated impact, and also helps identify what drives effectiveness or efficiency of interventions in order to guide further design, development or evaluation. The resulting evidence will support informed decision-making about the future design of technology and will estimate its market potential at early stage of the product life cycle. By reducing uncertainty, MAFEIP represents a clear support in the decision-making process.

C) Scaling up Good Practices

The A3 approach to scaling up good practices is grounded in the European Scaling-up Strategy in Active and Healthy Ageing (35) with the ambition of mobilising sufficient resources and expertise, to ensure implementation of innovative solutions for active and healthy ageing on a European scale. Many good examples throughout the EU have been set-up, tested and implemented by the EIP on AHA stakeholders. A3 partners acknowledge that References Sites can act as a catalyst to foster scaling-up across regions and countries. The EC has identified five steps for an effective European ‘scaling up strategy’. The first three are a “what to scale up” element, while the remaining two constitute the “how to scale up” part.

Central to this strategy are the tools that have been created by PROEIPAHA, that allow partners to identify:

- how the innovative services were planned and set up;
- the organisational process and design choices
- indicators for monitoring and evaluation
- the dissemination plan that targeted specific regional contexts.

The flexibility and interoperability features of the tools facilitate the modular set up of good practices to be implemented and adopted in different EU settings. These tools will support the process of change, the viability assessment for scaling-up, the adjustment for local replication, and finally the implementation process.

D) Models of Care for Integrated Management

Age-related disability and functional dependence will ultimately impact wellbeing and healthcare systems in the EU, placing their sustainability at risk. This implies a re-aligning of healthcare systems in order to better address the needs of older people, independent of their socioeconomical background. This requires a comprehensive public health response. To manage this task two conceptual milestones must be understood and addressed:

1. Once established, disability is hard to reverse. This is one of the main reasons why prevention is important in the fight against disability in older adults, with the identification of conditions preceding the development of disability being a priority. The most important risk factor is frailty. The identification of risk factors for frailty, the improvement in the accuracy of the diagnosis of frailty and better knowledge of factors that predict the evolution from frailty to disability are key steps in addressing disability in older adults. Take the example of the public health approach to preventing, detecting and managing hypertension with the aim of avoiding or delaying stroke or myocardial infarction. Focusing on the risk factor (hypertension) has produced great benefits by decreasing the incidence of its consequences (cardiovascular disease and stroke), which are associated with disability.
2. Second, older people are heterogeneous in terms of their quality of life, functional capacity and the type of diseases and conditions that they are affected by. Physical, cognitive, sociocultural factors contributing to functional decline and disability interact with each other, suggesting that preventive measures should take all factors into account. Accordingly, the provision of care must embrace not only prevention but also early detection and management, with different approaches depending upon the setting and the functional status (not the disease) of the person. This has been stated in the “Framework for the management of older people according to their functional status and setting of care” document released by the A3 Group (Table 1 and 2).

Frail older adults utilise a considerable amount of health and social services. To date, most interventions are aimed at avoiding progression to disability. **Prefrail older adults** are a population where the potential exist to prevent the development of overt frailty and it is expected that modification of risk factors through preventative approaches, which are often low cost. Little knowledge is available to identify and stratify this target population, and A3 AG will fill in this gap.

**Table 1. Recommendations for the management (screening-S, diagnosis-Dx and intervention-I) of older people according to functional status and setting of care**

<table>
<thead>
<tr>
<th>Setting/functional status</th>
<th>Robust</th>
<th>Frail</th>
<th>Functional Decline</th>
<th>Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community</strong></td>
<td>S: People with chronic conditions and people older than 75*</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
</tr>
<tr>
<td></td>
<td>Dx: None</td>
<td>I: Promote healthy life-styles</td>
<td>I: Promote healthy life-styles</td>
<td>I: Promote healthy life-styles</td>
</tr>
<tr>
<td></td>
<td>S: People with chronic conditions and older than 75*</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
</tr>
<tr>
<td></td>
<td>Dx: None</td>
<td>I: Promote healthy life-styles</td>
<td>I: Promote healthy life-styles</td>
<td>I: Promote healthy life-styles</td>
</tr>
<tr>
<td><strong>Primary care</strong></td>
<td>S: People with chronic conditions and older than 75*</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
<td>Dx: Confirm diagnosis and assessment of comorbidity, functional and cognitive status, social support</td>
</tr>
<tr>
<td></td>
<td>Dx: None</td>
<td>I: Promote healthy life-styles</td>
<td>I: Promote healthy life-styles</td>
<td>I: Promote healthy life-styles</td>
</tr>
<tr>
<td></td>
<td>S: People with chronic conditions</td>
<td>Dx: Confirm diagnosis. Comprehensive Geriatric Assessment.</td>
<td>Dx: Comprehensive Geriatric Assessment. Risk prediction in</td>
<td>Dx: Comprehensive Geriatric Assessment. Risk prediction in</td>
</tr>
<tr>
<td></td>
<td>Dx: Functional decline</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Long-term care (institution)

<table>
<thead>
<tr>
<th>Setting/functional status</th>
<th>Robust</th>
<th>Frail</th>
<th>Functional Decline</th>
<th>Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>Access to skilled integrated health and social care</td>
<td>Access to skilled integrated health and social care</td>
<td>Access to skilled integrated health and social care</td>
<td>Access to skilled integrated health and social care</td>
</tr>
<tr>
<td>Primary care</td>
<td>Annual screening for people at risk. Coordination with community.</td>
<td>Monitoring of functional status (physical and mental)</td>
<td>Monitoring of functional status (physical and mental)</td>
<td>Monitoring of functional status (physical and mental)</td>
</tr>
</tbody>
</table>

**Table 2. Services to be provided to older people in different care settings according to their functional status**
This new conceptual framework on providing care, developed by the A3 partners is centred on function instead of disease, to prevent rather than react, to focus care
and not just cure, and to provide continued and integrated care instead of focal, discontinued and fragmented services (Figure 2).

E) Identify and Implement Enabling Technologies

Another key general objective is the identification and implementation of suitable enabling technologies, at the forefront of advanced and sustainable economies. Healthcare is a field of science with a high turnover of innovations in technologies and biomedical research. Pervasive health care concerns home care, such as emergency detection and alarm, disease management, as well as feedback and advice on health status. Other optional functionalities contribute to define person-centered ICT architectures that are interoperable with telehealth services and health care institutions record and can provide sustainable options to ensure high quality care and cure. Health enabling technologies and sensor enhanced health information systems can innovate the way we live and manage our health, influencing interactions, exchange of information, and when they are integrated by adequate ICT literacy initiatives can also contribute to social cohesion.

A3 partners have been testing novel approaches to frailty prevention that exploit enabling technologies and provide synergic and sustainable solutions to scale up.

F) Dissemination and Active Involvement of the Stakeholders

Effective communication and active dissemination of evidence to all relevant stakeholders requires easy-to-understand formats, that is strategic in raising the awareness of relevant topics. The adoption of new tools by professionals and end users is intertwined with dissemination and training strategies, to make results more easily accessible for the general public, educators, patients, and clinicians. The dissemination strategy of the A3 partners is aimed at influencing individual decisions, changing practice and informing future research. It focuses on the work and results of the commitments of interested parties inside and outside of the EIP on AHA, including healthcare professionals, patients, policy makers, industries and academic institutions. Different materials and methods will be developed and used to ensure coordinated and sustainable activities.

G) Synergies to the other Action Groups and the Reference Sites

A key component identified in planning the renovated A3 Action Plan is the need to increase communication, particularly the exchange of ideas, between members of other Action Groups and the existing 32 EIP on AHA Reference Sites. The need to develop these synergies is clear and it is expected that their development will reduce the likelihood of good practice being developed in isolation (i.e. in silos). This has led to creation of the Task Force on Synergies. The Task Force on Synergies will align with all of Renovated Action Plans to ensure that synergies are coherent and fully connected. Several members of the A3 AG are closely involved in this task force. Collaborative work is being encouraged through the development of SPRINTS, short achievable projects linking different action groups and their members the results of which will be reported every 6 months. To date eight proposals have been accepted including Impact of Community-based Program on Frailty Prevention and frailty Mitigation (ICP – FPM), led by A3. Priorities identified as SPRINTS for 2016-2018 are described below.
Activities to be undertaken to progress the renovation of the Action Plan are numerous, and will involve different resources and actors. The present document is coherent with the A3 open and inclusive approach, and as such is not intended to provide details on the specific results that will be achieved by the partners through their Commitments. Table 3 in Appendix 2 provides a list of the key activities that will be carried out by the partners to develop the Action Plan, that are open for contribution also to the future stakeholders of the group. Expected results, information on the lead partner, contributing partners, deadlines and impact will be provided on the Commitment tracker and MAFE tools.
Process for gathering ideas June - October 2015

Ideas for collaborative work

These ideas were gathered by PROEIPAHA project and promoters in direct communication with AG members. This set the ideas have been the basis for discussion regarding the renovation of the Action Plans.

Ideas from AG members

Gender issue

The relevance of gender issues emerged as an important topic and consensus suggested that it was insufficiently considered and addressed in A3 as well as in other action groups. It will be incorporated at multiple levels in the Renovated Action Plan. The higher prevalence of frailty in women is partly due to the higher percentage of females who reach old (advanced) age. Other factors may also contribute. Irrespective, the reality, as supported by most studies, is that the prevalence of frailty is higher in women. The approach to addressing frailty and functional decline in women requires specific actions because of other variables: social, psychological and of other that impact on gender. To address this gap, the European Commission has included this specification into its programs. A3 partners will contribute to generate evidence, research and good practice to address this important issue. Frailty and several chronic diseases show a gender profile that should be taken into account when designing intervention strategies.

Preventive measures

Prevention measures are considered very relevant to the renovation of the Action Plan because they are key to addressing frailty and importantly in reversing pre-frail states. Frailty is a state of vulnerability, and the “strengthening” of older adults is an important aim, framed in the context of prevention of disease progression and health promotion. The same may be said in relation with cognitive decline, which may be thought of as state of frailty, which if addressed early it may be amenable to intervention. For these reasons a preventative approach will be pivotal to the generation of evidence based management strategies to address the different dimensions of frailty.

Scale-up strategy

The Action Areas created by the A3 AG provide for the cataloging of good practices that can be scaled up. This allows for the creation of a specific scale-up strategy to determine the structural change needed to reorganize our health and social services to face the societal challenge of ageing. To this purpose, more collaboration between the action groups and the reference sites is needed, and should be structured.

Inclusiveness

The participation of all stakeholders in the design, testing and implementation phase of the activities and of the innovative approaches is the key to durable and sustainable changes. To this purpose, it is important to ensure adequate representation of the stakeholders in the different action areas. Closer collaboration with SMEs will be important. There is a need to make every effort to
bring them into the areas of interest in the Action Groups. Also, it will be important to increase the presence of patients associations. Although this is an increasingly relevant and growing movement in Europe, there is still much to be done to bring them into the fold in many countries and at many levels.

**Frailty and chronic diseases**

Detection and management (prevention and treatment) of frailty needs to pay special attention to:

1. Its relationship with the group of chronic diseases mostly closely linked to frailty.
2. Its detection and management in primary care
3. The liaison between primary care, specialized care (mainly that provided by Geriatric Medicine services), and social care
4. New models to provide adequate care, integrating the above

**Training**

Training of professionals with interest in frailty and related fields: cognitive decline, nutrition and physical exercise, needs to be encouraged. This will allow interested parties to take advantage of new tools and processes to speed up the adoption of innovative models of managing frailty. To this purpose, it is important to increase the involvement of scientific societies, which already constitute a consolidated network of good-quality professionals with invaluable knowledge and expertise.

**Research**

In order for the EU to maintain a competitive advantage there is a need to invest in research and development. It is pivotal to keep feeding support research by fostering collaboration and interdisciplinary work as well as by providing financial assistance. This approach requires the provision of support to bridge research in the biomedical and technical field with the social, communication, cultural sciences. Indeed, investigating the determinants and the mechanisms underpinning the different dimensions of frailty (cognition, nutrition, physical activity, functional domain, sociocultural determinants) needs a synergic approach to achieve breakthrough innovations which could benefit at all levels of society.

**Ideas from the PROEIPAHA survey**

Several ideas have emerged from the PROEIPAHA survey, that was launched in the Summer of 2015 to find out what new ideas could be considered to renovate the Action Plans of the currently existing six Action Groups. The results for A3 AG are described in detail.

**Joint dissemination plan**

The set-up of a joint dissemination plan was suggested by the Nutrition AA, in collaboration with the physical activity AA within A3. The general idea is to take advantage of each of the dissemination activities of already funded projects and to plan events in the context of the partners routine activities to disseminate good practices and to multiply opportunities to interact and cooperate on more targeted issues. To this purpose, the dissemination plan will start with the identification of
stakeholders, key messages and reasons for dissemination as well as detail of the activities to be deployed.

**Integrated lifestyle approach to pre-frailty**

There are several synergies that potentiate impacts: for example, primary nutritional interventions that drive societal changes, influence therapeutic regimens and change outcomes in older adults with multiple comorbidities. Lifestyle interventions that include physical activity and primary nutritional intervention further improve health outcomes. Adequate health literacy improves adherence to healthy choices, and can drive societal change.

All lifestyle interventions are more effective if designed and rooted in local culture. This means that early involvement of end-users in project design is pivotal, and that implementation strategies that are iterative help to improve the innovative products and make them fit to be adopted in the different contexts.

Collaborative work, focusing on assessing the different traditions in EU countries that foster good health in the domains of nutrition and physical activity would stress the importance of different EU cultural backgrounds. If associated with a contextual analysis, the collaborative work would generate transferable factors useful to create effective and sustainable primary nutritional interventions (for example to prevent hypovitaminosis D, present in different age groups for which further evidence developing is needed) rooted in the different local sociocultural backgrounds.

The availability of deliverables to end-users in different EU contexts would also foster cultural exchange while improving cohesion.

**Scaling up of good practice derived A3 Action Group Cognitive decline best practice’s across Europe.**

Cognitive decline is a major concern for the ageing population; Alzheimer’s disease is the major cause of age-related cognitive decline. The effectiveness of interventions in preventing onset of cognitive decline is increasingly recognised in the literature. Adopting a systematic approach to the development of interventions, supported by robust theoretical, empirical and clinical rationales would represent best practice. It would be important to establish:

- which are the current practices at the clinical level setting across Europe to prevent cognitive decline;
- the contextual and individual factors affecting their implementation;
- the perceived impact of the interventions;
- the processes used in achieving these effects.
- the barriers and bottlenecks as well as successful interventions.

**Life-long learning models**

A gap exists in the EIP on AHA concerning the development of life-long learning models that has not been adequately addressed, although training is mentioned in many AGs. Life long learning incorporates literacy, empowerment and educational training, hence it requires the involvement of academia, researchers, non-profit organizations, health professionals, and citizens. A targeted multi-stakeholder model should be implemented across the EU. This model could also address the
gaps that prevent the widespread adoption of ICT technologies that could play a key-role in redesigning health and social service provision.

Currently, gaps exist in health and ICT literacy across the EU. These affect many categories of end-users (professionals, patients, citizens, etc.) and hinder the adoption of innovations at multiple levels. Enabling all stakeholders to take advantage of existing innovative tools for good health would be a winning strategy capable of by-passing organizational bottle necks, building capacity within the system and drive economic growth.

**Ideas for synergies**

Synergies are thematic working groups with interests that cut across at least two or more Action Groups under the EIP on AHA. They have established a collaborative approach to address synergistic activities. These synergies include not only collaborative work but also specific niche sprints agreed among representatives of the different AGs involved. To manage the set of synergies identified across Action Groups, the EIP on AHA will provide a promoter and a person for administrative and secretariat services. Eight synergies have been selected and validated. Appendix 2 provides the description of the frailty related validated synergy, and of the priorities identified as cross-AG sprints for 2016-2018. These cross sectional sprints have been identified by A3 partners in the context of the Task Force for Synergies group, and are a collaborative effort to be carried out in a 6 month timeframe based upon the partners own resources.
Governance and coordination

Governance principles

Action Groups will establish their own working methods and governance with the EC acting as a facilitator. There are three components to the governance structure: the partners, the AG coordinators and the EC. The governance structure will ensure timely development of the action plan and the incorporation of new partners. The rules of engagement are based on the following principles:

- Openness and partnership – common willingness of all partners to cooperate with other relevant partners.
- Coordination – participation of a representative(s) in the coordination meetings of the Action Group
- Reporting – regular reporting from the Action Group’s meetings, progress of actions and deliverables to be made public
- Evaluation – outcome of actions to be evaluated and results made public

Role & responsibilities of Partners

- Implement the Action Plan according to the agreed standards and deadlines
- Ensure the effective preparation and delivery of all AG products
- Evaluate the performance of the AG and report on progress

Role & responsibilities of Coordinators

- Implement the Action Plan according to the agreed standards and deadlines
- Lead the AG team and coordinate all matters of the commitment contents
- Regular liaison with the EC and facilitator on all AG related matters
- Ensure the effective preparation and delivery of all AG products
- Participation at meetings and in discussions
- Take responsibility for the effective flow of information between AGs/AG partners
- Support the evaluation of the performance of the AG and report on progress
- Submit the final results of the Action Plan based on data provided by all AG partners

Role & responsibilities of the European Commission

- Representation of the Action Group
- Handling of external communication
- Monitoring framework
- Ensuring regular communication among partners
- Taking responsibility for the effective flow of information and interactions between partners and AGs
- Seeking opportunities to consolidate EIP
Appendix 1. A3 Bibliography

Appendix 2. Collaborative work

1. Screening, monitoring and early diagnosis

1.1 Integrated assessment and personalised interventions to improve nutrition

Preventing malnutrition in later life requires a life course approach and a strong focus on primary prevention. Food and culinary innovations conjugate social aspects linked to the culinary traditions, and provide targeted interventions that are coordinated across the different settings (community, hospital, assisted facilities). Functional foods and supplements represent powerful tools to improve the outcomes whenever their use is appropriate. Malnutrition screening, assessment and tailored interventions should be part of routine assessments of older people. Adequate dissemination strategies are needed to raise the awareness of older people, general public, professionals and policy makers about the importance of a balanced diet and adequate protein intake.

1.2 Identification of people at increased risk of frailty and functional decline

Early identification of frailty is linked to appropriate interventions to prevent or delay functional decline and adverse health outcomes. Raising awareness with the public and professionals, population risk stratification, targeted screening and systematic triage of people at risk i.e. those with cardiovascular disease, endocrino-metabolic disorders, arthritis, osteoporosis, chronic obstructive pulmonary disease, dementia/cognitive impairment and polypharmacy, need to be targeted.

1.3 Screen, prevent and offer support to people affected by cognitive decline

The neuroplasticity of the human brain is responsible for its adaptation to physical, cognitive and social environment challenges. Cognitive decline is increased by social and sensory isolation, and increase the risk of dependency. Given the association between physical and cognitive decline, functional screenings and assessments should include both dimensions, particularly for symptomatic individuals. Current evidence does not support unselected screening for cognitive decline but its early detection may improve treatment strategies. Physical activity, cognitive training and social engagement reduce cognitive decline in older adults and enable them to stay connected to their families and local communities. To this purpose, social, medical and financial support for caregivers is also important as they too may be at risk of frailty.

2. Prevention

2.1 Involve all stakeholders in raising awareness and advocacy about frailty

To promote AHA, we must listen and respond to the views, needs and aspirations of older people including those who are frail or vulnerable. We must be strong advocates for the rights of frail older adults, and people from all sectors of society must be well informed about healthy ageing and the challenge of frailty. All stakeholders need to understand their role and responsibility (societal, political, policy making, educational, professional, legal, technological, financial), for
designing and delivering age friendly communities to prevent and reduce the impact of frailty. Involving all stakeholders in this process will improve the choice on the most appropriate interventions, the monitoring of impacts, enhancing experience and outcomes, and adding value for individuals and for the system.

### 2.2 Empower older people to stay connected and participate as active citizens: ICT tools as enabler of social inclusion

Most older people provide meaningful contributions to their communities – financial, provision of social support and care, volunteering and what may be described as ‘social glue’. However, loneliness and social isolation, common in later life, are risk factors for and may depend on functional decline. Health and wellbeing, cognitive function, independence and resilience are enhanced by smart homes, transport and age friendly communities which offer accessible social, cultural and physical activities, peer support, befriending, intergenerational practice, enabling older people to stay connected and participate as active citizens.

To ensure adoption of new services, older people need to become more aware and confident of the use and advantages of embedding the technologies in their daily lives. Person centred ICT, tailored to the health literacy and support needs of the older person and their caregiver empowers greater choice and control. It improves access to information and social networking, and can assist the older person to remain connected, safe and independent at home and active in their community for longer. Technology can also streamline prevention, assessment, treatment and care processes and enhance the skill mix and collaboration of the integrated team.

### 2.3 Promote physical activity to maintain physical and cognitive function

People who exercise throughout life and remain physically and mentally active in later life have a better chance of avoiding or postponing frailty and managing functional decline. Targeted dissemination campaigns should be integrated in prevention and health promotion activities targeting all categories of stakeholders. Simple clear messages on the benefits of physical activity in general and for older people in particular, should be provided, informing citizen on how much exercise they should engage in, how often and what are the best strategies for strength and balance training to reduce risk of falls, fracture and disability. Housing, community and voluntary partners as well as health and social care providers should use practical tools to enable older people to undertake the required level of activity across healthcare settings.

### 3. Care and Cure

#### 3.1 Deliver comprehensive assessment, rehabilitation and case management

Comprehensive Geriatric Assessment (CGA) and rehabilitation reduce functional decline. CGA should be delivered by a multidisciplinary team across the pathway of care from home to hospital and in care home settings, ideally within an integrated health and care system and using validated/standardised assessment instruments. CGA should be supported by a case management approach that proactively coordinates and integrates health, social care, community and other support services to improve outcomes for frail older people. While CGA is effective when delivered by trained professionals in hospital settings, the evidence base in the management of frail older adults in the community needs to be strengthened. CGA
is particularly important at times of transition between care settings and during hospitalisation where the risk of progressing from frailty to disability is highest.

3.2 Build workforce capability to deliver new models of integrated care

Effective models of care and support for frailty require multi-professional integrated approaches from health and social care professionals with knowledge and skills to manage common syndromes associated with frailty, including its psychosocial and cognitive components. Integrated workforce planning is required to ensure the right care settings. The workforce should be supported to develop and apply new and extended roles in practice, to work well with colleagues and partners from other sectors and to be confident in using technology to enable new models of care and support tailored to the needs of frail older adults. The implications invest undergraduate and postgraduate training, academic institutions, professional and regulatory bodies for all disciplines.

4. Research and Education

4.1 Invest in innovation, research, evaluation and knowledge transfer on frailty

To expand the scope and depth of our understanding about the prevention, detection and management of frailty and functional decline we need to explore determinants and pathophysiology of frailty including genetics, epigenetics and social genomics (the impact of social, environmental and lifestyle determinants on molecular models of ageing) and the role of chronic disease in the development and evolution of frailty. We need to understand the effectiveness of new pharmacological approaches and of new models of care, and seek to identify innovative solutions to new and emerging challenges as the population ages. Investment in biomedical research and in networks and platforms must support collaborative research, interdisciplinary innovation and knowledge between partners from all sectors. This research needs robust evaluation to understand what works to spread and scale up successful research projects within and across Member States. There is a parallel need to develop measures of change.

Specific Objectives and Activities

Table 3. Scheme of the specific objectives for each pillar, and related activities.
<table>
<thead>
<tr>
<th>PILLARS</th>
<th>GENERAL OBJECTIVES</th>
<th>SPECIFIC OBJECTIVES</th>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B, C, E, G</td>
<td>operative screening tools and approaches for assessing physical and cognitive functioning and malnutrition, and economic/social frailty, at Community level.</td>
<td>1.3 Implement strategies to screen and to reduce functional (physical and cognitive) decline by promoting physical activity.</td>
<td>regional level. 1.2.2 Socio-economic modelling to find out cost-effective strategy for screening 1.2.3 Scale-up multidimensional screening tools such as the InterRAI suite 1.2.4 Spread out the identified strategies for assessment of pre-frailty, frailty 1.3.1 Assess frailty in older adults with multimorbidity/chronic diseases defined in terms of number and severity (diabetes, heart failure, ischemic heart disease, cognitive impairment/dementia, arthritis and COPD). This will allow putting the focus in the high-risk population. 1.3.2 Identifying the different effect of several chronic diseases and specific clusters (diabetes, heart failure, ischemic heart disease, cognitive impairment, COPD, osteoarthritis) on the risk of frailty and its evolution</td>
</tr>
<tr>
<td>A, B, C, E, G</td>
<td>1.4 Identifying operative tools to assess frailty in different clinical and gender settings. 1.5 Screening and assessment of malnutrition as a risk factor for AHA.</td>
<td>2.1 Developing lifestyle strategies, that take into account gender differences, and are focused where evidences are available (physical</td>
<td>2.1.1 Increase tools to prevent frailty focusing gender issues along patterns concerning physical frailty, nutrition, cognitive decline, social isolation.</td>
</tr>
<tr>
<td>A, B, C, G</td>
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2. Prevention

<p>| A, B, C, E | 2.1 Developing lifestyle strategies, that take into account gender differences, and are focused where evidences are available (physical | 2.1.1 Increase tools to prevent frailty focusing gender issues along patterns concerning physical frailty, nutrition, cognitive decline, social isolation. |</p>
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<tr>
<td>A,G</td>
<td></td>
<td>activity), to reduce mild cognitive impairment</td>
<td><strong>2.2</strong> Promote merging of data from existing cohorts of pre-frail and frail people in order to raise the quality of the information we have about these issues in Europe, and support data aggregation also according to gender specificities. <strong>2.2.1</strong> Identify and implement technologies to enable independence, wellbeing and collaboration. <strong>2.2.2</strong> Develop tools and techniques to monitor daily functioning and more importantly decline in daily functioning as risk factor for development of frailty <strong>2.2.3</strong> Modular and interoperable ICT infrastructure and tools to enable large scaling up across Europe</td>
</tr>
<tr>
<td>B, C, E, F, G</td>
<td>2.3 Dissemination on healthy diet impact on health outcomes across the different EU socio-cultural backgrounds</td>
<td><strong>2.4</strong> Empowerment on healthy food choices</td>
<td></td>
</tr>
<tr>
<td>B, C, E, F, G</td>
<td>2.5 Food supply, agriculture and nutritional interventions</td>
<td><strong>2.6</strong> Identifying effective and efficient strategies to counteract social isolation and empower older people to stay connected and participate as active citizens, also through ICT literacy initiatives <strong>2.6.1</strong> Increase the presence of patients associations and create a Senior people committee. <strong>2.6.2</strong> Identify and implement technologies to enable independence, wellbeing and collaboration.</td>
<td></td>
</tr>
<tr>
<td>A, B, C, D, E, F, G</td>
<td>3.1 Developing and bringing to practice tools for neuro-</td>
<td><strong>3.1.1</strong> Closer collaboration with SMEs, to bring them into the areas of interest in</td>
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### PILLARS

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<tr>
<th>B,C,D,E,F</th>
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<td>A,B,C,G</td>
<td>rehabilitation.</td>
<td>3.2 Put gender issues in specific non-communicable chronic diseases for instance more affecting women; good examples are musculoskeletal (osteoarthritis), and cardiovascular diseases, cognitive decline, and cancer (breast and others).</td>
<td>the Action Group</td>
</tr>
<tr>
<td>B,C,D,G</td>
<td>3.3 Constitution of transnational databases, to obtain good quality evidence of the specificities across Europe, and provide a minimum body of data to implement across all member states.</td>
<td>3.2.1 Increase the gender issue tailoring the service provision offer of particular patterns concerning frailty, nutrition and cognitive decline.</td>
<td></td>
</tr>
<tr>
<td>B,C,D,G</td>
<td>3.4 Integrate gender issues in the approach to specific non-communicable chronic diseases for instance more affecting women; good examples are musculoskeletal (osteoarthritis), and cardiovascular diseases, cognitive decline, and cancer (breast and others).</td>
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<tr>
<td>B,C,D,G</td>
<td>3.5 Identify the modality of involvement of Primary Care in the detection and</td>
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<tr>
<td>PILLARS</td>
<td>GENERAL OBJECTIVES</td>
<td>SPECIFIC OBJECTIVES</td>
<td>ACTIVITIES</td>
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<tr>
<td></td>
<td></td>
<td>management of frailty.</td>
<td>4.1.1 Identifying prognostic factors about response to interventions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.6 Culinary approach</td>
<td>4.1.2 Identify molecular mechanisms responsible for frailty determinants: cognitive impairment, malnutrition</td>
</tr>
<tr>
<td>4. Research and education</td>
<td>A,D,E,G</td>
<td>4.1 Researching trajectories of ageing, development of frailty and related comorbid diseases, taking into account gender specific determinants and functional decline.</td>
<td>4.1.3 Identifying biomarkers for early detection of non-communicable chronic diseases, cognitive impairment and malnutrition</td>
</tr>
<tr>
<td></td>
<td>B,C,D,F,G</td>
<td>4.2 Knowledge generation on food supplements, integrators and innovative biomarkers.</td>
<td>4.1.4 Identifying biomarkers (clinical and lab) to best characterise the risk of functional decline from robustness to frailty and disability</td>
</tr>
<tr>
<td></td>
<td>B,C,F,G</td>
<td>4.3 Innovative approaches to</td>
<td>4.1.5 Developing innovative tools and protocols integrating in service provision the above biomarkers for general assessment of mild cognitive impairment and malnutrition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.2.1 Training of professionals with multidisciplinary profiles about frailty, cognitive decline, nutritional and physical activity needs through new training courses, master degrees, PhD programs</td>
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<td></td>
<td></td>
<td></td>
<td>4.2.2 Increase the involvement of scientific societies.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>4.3.1 Increase the presence of patients associations and create a Senior people committee.</td>
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<tr>
<td>PILLARS</td>
<td>GENERAL OBJECTIVES</td>
<td>SPECIFIC OBJECTIVES</td>
<td>ACTIVITIES</td>
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<td></td>
<td>E,G</td>
<td>regulatory issues and Cost evaluations</td>
<td><strong>4.4.1</strong> Closer collaboration with SMEs, to bring them into the areas of interest in the Action Groups.</td>
</tr>
<tr>
<td></td>
<td>B,C,F,G</td>
<td>4.4 Spread out education on frailty between professionals, either from the health and social fields, or from others, as required to advance in integrated care.</td>
<td><strong>4.5.1</strong> Scalable and interoperable ICT infrastructure and tools to enable large scaling up across Europe</td>
</tr>
<tr>
<td></td>
<td>A,B,C,D,E,F,G</td>
<td>4.5 Identifying effective and efficient strategies to counteract social isolation and empower older people to stay connected and participate as active citizens, also through ICT literacy initiatives</td>
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<td></td>
<td>B,D,E,G</td>
<td>4.6 Develop innovative tools and techniques to monitor functioning and more importantly decline in daily functioning as risk factor for development of frailty.</td>
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<td>4.7 Innovative strategies to transfer and scale-up the identified innovations targeting pre-fraility, frailty and functional decline.</td>
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<td>4.8 Implement innovative strategies to screen</td>
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</tr>
</tbody>
</table>
Priorities identified as cross-AG sprints for 2016-2018

The cross sectional sprints described below have been identified by A3 partners in the context of the Task Force for Synergies group and are a collaborative effort to be carried out in a 6 months timeframe based upon the partners own resources.

Table 4. Cross-AG sprints

<table>
<thead>
<tr>
<th>Nº</th>
<th>Name</th>
<th>AG</th>
<th>Start</th>
<th>End</th>
<th>Geographic coverage</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>S 1</td>
<td>Set up a community - based public health approach to scale-up multidimensional screening tools in order to prevent, detect and manage frailty in community dwelling elderly</td>
<td>A3-B3-A1</td>
<td>15-Jan-2016</td>
<td>31-Mar-2016</td>
<td>Six Countries</td>
<td>Report on the action plan to implement a public health approach to frailty in community dwelling elderly</td>
</tr>
<tr>
<td>S 2</td>
<td>Set up of a methodology to find out the cost-effective of the public health program</td>
<td>A3-B3-A1</td>
<td>15-Jan-2016</td>
<td>31-Mar-2016</td>
<td>Six Countries</td>
<td>Report on the assessment methodology</td>
</tr>
<tr>
<td>S 3</td>
<td>Set up of the training course on scalable ICT tools aimed to prevent/mitigate functional decline and improve nutrition</td>
<td>A3-B3</td>
<td>15-Jan-2016</td>
<td>31-Mar-2016</td>
<td></td>
<td>ICT training course</td>
</tr>
<tr>
<td>S 4</td>
<td>Risk Classification related to frailty involving at least 3,000 older adults citizens</td>
<td>A3-B3-A1</td>
<td>1-Apr-2016</td>
<td>31-Dec-2016</td>
<td>Six Countries</td>
<td>Constitution of a transnational data base on risk classification</td>
</tr>
<tr>
<td>S 5</td>
<td>ICT training course</td>
<td>A3-B3</td>
<td>1-Apr-2016</td>
<td>31-Dec-2016</td>
<td></td>
<td>Training course done for at least 10% of the citizens involved in risk classification</td>
</tr>
</tbody>
</table>
A3 Synergy_01_2016:

Impact of Community-based Program on Frailty Prevention and frailty Mitigation (ICP – FPM)

**Description:** Prevention and early diagnosis of frailty and functional decline are closely related with the integration of the care of chronic diseases. Both operate primarily in the community and rely on integrating primary, secondary and social (community) care. Both require this integration of health and social care, either to deliver complex assessment e.g. Comprehensive Geriatric Assessment (CGA) or for the implementation of tailored interventions to target frail individuals. As said, these are a vulnerable group of individuals, often overlooked by single dimensional disease-specific guidelines used in clinical practice, who require a more comprehensive approach in order to prevent disability, recurrent hospitalisations and related heath and social care costs. To be successful in the care of older adults with chronic diseases, interventions must integrate adequate health care with a social environment capable of supporting the patient through different stages of diseases (1, 2). Empirical evidence shows that women have higher rates of frailty, both physical and cognitive, and that the distribution of chronic diseases varies by sex (3). Thus, interventions must be gender sensitive. The general objective of this proposal is to set up a public health approach to manage frailty in community dwelling older adults, to be validated in different EU member states (at least six).

**Action Groups involved:** A1, A3, B3.
## Appendix 3. List of contributing partners

<table>
<thead>
<tr>
<th>Organisation/Consortium partners</th>
<th>Country</th>
<th>Specific partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Università Cattolica del Sacro Cuore</td>
<td>Italy</td>
<td>Roberto Bernabei</td>
</tr>
<tr>
<td>University of Valencia</td>
<td>Spain</td>
<td>Antonio Cano</td>
</tr>
<tr>
<td>Federico II University &amp; Hospital, Campania Reference Site</td>
<td>Italy</td>
<td>Maddalena Illario</td>
</tr>
<tr>
<td>University of Twente</td>
<td>The Netherlands</td>
<td>Miriam Vollenbroek</td>
</tr>
<tr>
<td>Sermas Hospital Universitario de Getafe</td>
<td>Spain</td>
<td>Leocadio Manas</td>
</tr>
<tr>
<td>University College Cork, the COLLaBoration on AGEing (COLLAGE) reference site</td>
<td>Ireland</td>
<td>William Molloy</td>
</tr>
<tr>
<td>University College Cork, the COLLaBoration on AGEing (COLLAGE) reference site and the National University of Ireland, Galway</td>
<td>Ireland</td>
<td>Rónán O’Caomh</td>
</tr>
<tr>
<td>Medical University of Graz</td>
<td>Austria</td>
<td>Regina Roller-Wirnberger</td>
</tr>
<tr>
<td>University of Parma, Emilia-Romagna Region</td>
<td>Italy</td>
<td>Marcello Maggio</td>
</tr>
<tr>
<td>University of Salerno</td>
<td>Italy</td>
<td>Guido Iaccarino</td>
</tr>
<tr>
<td>Center for Gastrology</td>
<td>Belgium</td>
<td>Edwig Goossens</td>
</tr>
<tr>
<td>University of Algarve - Center for Research and Development in Health</td>
<td>Portugal</td>
<td>Nidia Braz</td>
</tr>
</tbody>
</table>
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