The current ageing demographic is a challenge for European policies because of the associated increase in the requirement for health and social care services, which stresses healthcare systems. In this context, the concept of Active Ageing plays a key role in the political agenda, in terms of planning and implementing successful strategies to ensure the sustainability of health systems.1,2 Active Ageing is “the process of optimising opportunities for health, lifelong learning, participation and security to enhance quality of life as people age”,1 and it reinforces positive aspects of ageing (i.e. environmental and behavioural factors).2 In a historical period in which few health policies invest in prevention,2 Active Ageing can be a driver for the implementation of health-promoting programmes. It is important to remember that successful strategies for Active Ageing are achieved through properly integrated policies (i.e. employment, health, social security, housing and social care).4,5

The health status of the population is the main determinant of the requirement for health and social care, but this is hard to define among individuals, populations, cultures, or even across time periods. Healthy Life Expectancy (HLE), which can be considered a proxy indicator for Active Ageing,6 is an indicator that attempts to measure the health status of the elderly population in a country, and is related to a range of factors that also include prevention programmes. HLE is generally growing at a slower rate than Life Expectancy and decreased in some EU countries between 2010 and 2015.6 This can be explained, firstly, by the fact that measurement of HLE is based on self-reported data, so it is affected by the subjective perception of the respondents as well as by their social and cultural background, while Life Expectancy is an objective parameter.6 Other additional factors are also implicated, such as the approach to prevention and care in the older age groups: until now, the prevention and care model has been focused on a specific disease or on a group of diseases, such as prevention programmes for cervical cancer or for cardiovascular diseases.

Even if the approaches used by these programmes are very effective, as has also been shown by the results in terms of Life Expectancy, they sometimes fail to take into consideration citizens who suffer from different diseases at the same time and often show a decreased personal ability to follow medical prescriptions and/or a reduction in individual social capital that leaves them on their own coping with an increasing need for care. These people do not necessarily show a severe functional decline even in the presence of comorbidities, and need tailored intervention of prevention and care, based on an assessment of the risk of negative outcomes in the near future. This risk is determined not only by the diseases they suffer, but also by their functional status and by the availability of social and economic resources. Most older adults are affected by multimorbidity,7 which entails patterns of progression of individuals towards psychological and physical dependency. In fact, the use of services, and primarily more expensive hospital services, is determined by an individual’s functional decline and by psycho-social factors that increase the vulnerability of that individual to internal and environmental stressors more than by a specific disease or even by multimorbidity.8 Bio-psychosocial factors should be managed in order to reduce the risk of negative outcomes like mortality, hospitalisation and institutionalisation. However, in order to manage this risk, it is crucial to measure it at community level, so as to detect different risk levels to be connected to personalised care interventions. The risk of negative outcomes associated with vulnerability could be defined as the frailty of an individual. Frailty is the combination of the individual’s intrinsic capacity and the context of that individual’s life, such as social relationships, household income and living arrangements. Frailty is associated with a higher incidence of multimorbidity, a different level of disability, reduced quality of life and increased healthcare service utilisation. Over the last decade, a view of frailty in older adults has been emerging, and is increasing on the basis of the bio-psychosocial paradigm developed in accordance with the WHO theory of health determinants.9 This recognises the multidimensional nature of aging and bases its main domains not only on the physical but also on psychological, social and economic factors.10,11 Many authors underlie the crucial role played by social factors, such as social isolation,12 as well as physical, psychological and cognitive ones, in increasing vulnerability to stressors, which is an expression of frailty. From a public health point of view, the multidimensional approach to frailty makes it possible to stratify the risk of negative events in sub-populations that do not yet show functional decline. The impact of social and economic determinants on health is a framework of historical significance for global public health and informs policies for supporting population health.13 For a multi-domain assessment, public health should focus on frailty.16 The first step in this process should then be an assessment of frailty, which could be administered as screening offered to all older adults (more likely to all citizens from 75 years of age), with very short, validated questionnaires designed for this purpose.
The Concept of Frailty

Putting frailty as the focus of the assessment of care needs would require a consensus definition of the concept, which we do not yet have.17-19 Frailty in community-dwelling older adults should be defined as a risk factor for functional decline, death, hospitalisation, decline of quality of life and/or institutionalisation.20-26 It is a multidimensional situation that involves the interactions of physical, psychological, environmental and socioeconomic factors.27,28,29 Older people perceive frailty as not only a physical issue, but also a social, psychological and environmental problem.30 Many factors play an important role in the development and progression of the frailty. Among the risk factors are the level of disability and the presence and type of cohabitants, while protective factors include “living with a spouse” and “having a high educational level”.31 Evaluations of all factors that cause frailty are essential for identifying the older population at risk for adverse outcomes (i.e. functional decline, death, hospitalisation) and for designing a prevention programme.

While in the past, researchers analysed the biological framework and its determinants, several studies are now focused on psychological and socioeconomic domains that determine and influence frailty.20-26,34 The assessment of non-biological frailty may play a crucial role in evaluating the burden of home care needs and in planning public health interventions. In fact, a lack of social and/or economic resources leads to increased use of acute care or long-term care services, even if the individual has minimal functional impairment.35-38 It is well established that the risk of death is associated with social isolation and that a strong social network has a protective effect.14

Frailty is a dynamic condition and three phases can be recognised: no-frailty, pre-frailty and frailty. Pre-frailty is an intermediate phase that frequently forms part of the progression from no-frailty to frailty. To date, the process and the associated factors that determine the progression to and from no-frailty, pre-frailty and frailty have not been totally understood. The literature has highlighted some factors predisposing to progression of frailty, such as age, baseline condition, male sex, educational level, and the presence of specific illness (e.g. dementia, stroke, diabetes mellitus).39-42 Even in this case, the factors assessed most often have been psychophysical ones.

Frailty can affect everyone during all stages of life, and has a prevalence rate ranging from 4% to 59.1% of the population. Nevertheless, the main age group affected is older adults: an average 10.7% of community-dwelling people aged more than 65 years are frail, with this percentage increasing to 15.7% and 26.1% for the 80-84 age group and the over-85 age group respectively.41

Comprehensive frailty assessment facilitates the planning of health and social care services, both at an individual and population level.42,43 The debate on the appropriateness of tools developed for frailty screening is still ongoing,44-47 and there is insufficient evidence for screening, monitoring or surveillance programmes at population level: a recent umbrella review did not find any short multidimensional screening tools suitable for use by public health practitioners at population level.48 Even though assessment of frailty is not yet a common step for accessing appropriate care pathways, some European Union (EU) countries have developed integrated models of frailty assessment and good practices to address the management of chronic diseases, which have been implemented locally or regionally in several member states.49-51

The prevention of frailty at community level, or the delay in its onset/progression, is potentially associated with an improvement in the quality of life of citizens, which could translate into an increase in HLE and a reduction in the use of health care services. This would result in an improvement in the sustainability of the health system in the medium-long term. Some evidence is already available about the benefits of this approach.52-57

A new public health approach is therefore required that is able to offer appropriate care to frail older patients through the various stages and severity levels of disease, as well as guided access to frailty prevention programmes for robust citizens in order to postpone the onset of frailty as long as possible. A proactive model focused on frailty assessment59 could become an entry point for patients and healthcare professionals in accessing integrated care, while the integrated management of chronic disease and frailty prevention programmes could offer appropriate tailored care pathways for each patient.53,54

Interventions to mitigate frailty and its consequences

In order to prevent the onset of frailty, interventions or programmes should be planned for managing co-morbidities, cognitive and functional impairment, and caregiver and social networks, and for promoting physical activity. In the context of the A3 Action Group-European Innovation Partnership on Active and Healthy Ageing, several intervention programmes have been implemented in order to prevent social isolation, physical decline, malnutrition and adverse drug reactions.56

An Italian program entitled “Long Live the Elderly!” (LLE) is aimed at increasing social networks and encouraging access to health and social services. This programme was able to limit increased mortality during the 2015 heatwave, with a reduction in expected mortality of 13%,57 and reduced the hospital admission rate by approximately 10%.58

Two interventions have been designed for the screening and the prevention of malnutrition: the Prevention of Malnutrition in Senior Subjects project, which aims to prevent protein energy malnutrition in older populations by administering a protein screener questionnaire,59 and the “NutriLive” project, which aims to improve knowledge of professionals about the nutritional needs of older adults.60

Physical activity is the main aim of two intervention projects: one project is a multi-component community-based exercise intervention that aims to improve gait patterns, balance and functional fitness,61 which has resulted in an improvement in physical performance of subjects observed up to 18 months after intervention. Positive results in the management of frailty have also been achieved by preventive home visits or multi-professional senior group meetings on the progression of frailty.62 Favourable effects on frailty indicators have also been observed using nutritional supplementation, cognitive training and combined multi-component interventions, e.g. combining physical exercise with nutritional supplementation.63

The Frailty, Falls and Functional Loss Education programme is an online course intended to improve knowledge about the ageing process, falls and functional decline, to promote independent living, and to provide strategies to promote active ageing and maintain independent living.64

In relation to medication, an Italian research group has developed a computerised prescription support system to manage polypharmacy and adverse drug reactions.65

Multi-factorial intervention programmes that include physical activity, nutrition and medication are effective, as demonstrated by one randomised, controlled trial. For this reason, the Personalised ICT Supported Service for Independent Living and Active Ageing project was developed. This project involves health pro-
Conclusion
Further studies need to investigate the implementation of frailty models for physical activity, cognition and nutrition.64,65

References

motion and education interventions to improve self-management programmes for physical activity, cognition and nutrition.64,65

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