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Living Lab Falls-MACVIA-LR: The falls prevention initiative of the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) in Languedoc-Roussillon



H. Blain^{c,d}, F. Abecassis^e, P.A. Adnet^c, B. Alomène^c, M. Amouyal^f, B. Bardy^d, M.P. Battesti^g, G. Baptista^c, P.L. Bernard^d, J. Berthe^h, C. Boubakri^c, J. Burilleⁱ, M.V. Calmels^j, B. Combe^k, D. Delignières^d, A. Dupeyron^{d,l}, G. Dupeyron^m, O. Engberink^{d,n}, F. Gressard^o, D. Hève^g, D. Jakovenko^p, C. Jeandel^c, M. Lapierre^l, M.S. Légise^c, I. Laffont^{d,q}, C. Laurent^r, B. Lognos^f, J.M. Lussert^s, K. Mandrick^d, V. Marmelat^d, P. Martin-Gousset^o, A. Matheron^j, G. Mercier^t, C. Meunier^{o,u}, J. Morel^l, G. Ninotⁿ, F. Nouvel^{k,v,w}, J.P. Ortiz^x, M.P. Padelou^j, E. Pastor^{o,y}, J.Y. Pélissier^{d,l}, S. Perrey^d, M.C. Picot^z, N. Pinto^{aa}, S. Ramdani^d, F. Radier-Pontal^{ab}, E. Royère^h, I. Rédini-Martinez^g, J.M. Robine^{ac,ad,ae}, E. Roux^c, J.L. Savy^j, Y. Stephan^m, D. Strubel^{af}, G. Tallon^c, K. Torre^c, J.M. Verdier^{ag,ah,ai}, G. Vergotte^{ad}, E. Viollet^l, C. Albinet^{aj}, J. Ankri^{ak}, C. Annweiler^{al,am,an}, A. Benetos^{ao,ap}, O. Beauchet^{al,am}, G. Berrut^{aq}, P. Dargent^{ar}, L. Decker^{as}, O. Hanon^{at,au}, M.E. Joël^{av}, F. Nourashemi^{aw}, F. Puisieux^{ax}, Y. Rolland^{aw}, G. Ruault^{au,1}, B. Vellas^{aw}, A. Vuillemin^{ay}, C. Becker^{az}, N. Holand^{ba}, J.P. Michel^{ap}, T. Strandberg^{ap}, A. Bedbrook^{bb}, S. Granier^{bc}, T. Camuzat^{bd}, R. Bourret^{be}, N. Best^{bf}, O. Jonquet^{bg}, J.E. de la Coussaye^{bh}, J. Mercier^{bi,bj}, M. Noguès^{aa}, M. Aoustin^g, P. Domy^g, J. Bringer^{bl}, P. Augé^{bm}, C. Bourquin^{bn,1}, J. Bousquet^{a,*,b}

^a Respiratory Diseases Department, University hospital, Montpellier, France

^b Inserm U1018, Villejuif, France

^c Department of Geriatrics, Montpellier University hospital, Montpellier, France

^d EA 2991 Movement To Health, Euromov, University Montpellier 1, Montpellier, France

^e Fédération pharmaceutique méditerranéenne (FEDMED), Roujan, France

^f University Department of General Medicine, Montpellier Medicine Faculty, Montpellier, France

^g Agence régionale de santé, Montpellier, France

^h Pôle de compétitivité eurobiomed PACA-Languedoc-Roussillon, Marseille, France

ⁱ Société publique locale d'exploitation de Balaruc-les-Bains, Balaruc-les-Bains, France

^j Centre communal d'action sociale, mairie de Juvignac, Juvignac, France

^k Department of Rheumatology, University hospital, Montpellier, France

^l Department of Physical and Medical Rehabilitation, Nîmes University hospital, Nîmes, France

^m Department of Ophthalmology, ARAMAV (association réinsertion aveugles malvoyants), Nîmes University hospital, Nîmes, France

ⁿ EA4556 Epsilon, Université Montpellier 1, Montpellier, France

^o L'ETAPE - Pôle autonomie santé, CCAS de Lattes, Lattes, France

^p Union régionale des Professions de soins infirmiers libéraux du Languedoc-Roussillon, Maison des Professions Libérales, Montpellier, France

^q Department of Physical and Medical Rehabilitation, Montpellier University hospital, Montpellier, France

^r I2ML, fondation institut méditerranéen des métiers de la longévité, Nîmes, France

^s Centre communal d'action sociale (CCAS), Mairie, Prades-Le-Lez, France

^t Unité médico-économie, département de l'information médicale, university Hospital, Montpellier, France

^u Maire de Lattes, vice-président agglomération de Montpellier, Montpellier, France

^v Association française des ergothérapeutes français, Boisseron, France

^w Clinique du positionnement et de la mobilité, Nîmes University hospital, Nîmes, France

^x Union nationale des professions de soins médecins libéraux, France

^y Conseil régional de l'Ordre des masseurs kinésithérapeutes, maison des professions libérales, Montpellier, France

^z Department of Public Health, Montpellier University Hospital, Montpellier, France

^{aa} Caisse assurance retraite et santé au travail Languedoc-Roussillon (CARSAT-LR), Montpellier, France

^{ab} Conseil départemental de l'Ordre des pharmaciens, maison des professions libérales, Montpellier, France

* Corresponding author. Tel.: +33 4 67 41 67 00.

E-mail address: anna.bedbrook@inserm.fr (J. Bousquet).

¹ Deceased authors.

- ^{ac} Inserm Research Unit 988, Paris, France
^{ad} Inserm Research Unit 710, Montpellier, France
^{ae} École pratique des hautes études (EPHE), Paris, France
^{af} Department of Geriatrics, Nîmes University hospital, Nîmes, France
^{ag} EPHE, section des sciences de la vie et de la terre, Paris, France
^{ah} UMR S 710, université Montpellier 2, Montpellier, France
^{ai} Institut transdisciplinaire d'études du vieillissement, Montpellier, France
^{aj} CeRCA, UMR-CNRS 7295, Poitiers, France
^{ak} Gerontology Center, Site Sainte-Périne, université de Versailles St-Quentin, Paris, France
^{al} Department of Geriatric Medicine, Angers University Hospital, UPRES EA4638, Angers, France
^{am} University of Angers, UNAM, Research Center on Autonomy and Longevity (CeRAL), Angers, France
^{an} Robarts Research Institute, Department of Medical Biophysics, Schulich School of Medicine and Dentistry, University of Western Ontario, London, ON, Canada
^{ao} Department of Geriatrics, Nancy University Hospital, Inserm U1116, Lorraine University, Nancy, France
^{ap} European Union Geriatric Medicine Society, EUGMS, France
^{aq} GÉrontopôle autonomie longévité, Nantes University hospital, Nantes, France
^{ar} Université Paris-Sud, UMR 1018, Villejuif, France
^{as} UFR STAPS UCBN, UMR 1075, Caen, France
^{at} Broca Hospital, University Paris Descartes, EA 4468, Paris, France
^{au} French Society of Geriatrics and Gerontology, Société française de gériatrie et gérontologie, Suresnes, France
^{av} LEGOS, Dauphine University, Paris, France
^{aw} GÉrontopôle de Toulouse, Toulouse, France
^{ax} Department of Geriatrics, Lille University Hospital, Lille, France
^{ay} UFR STAPS, Université de Lorraine, Nancy, France
^{az} Robert Bosch Hospital, Stuttgart, Germany
^{ba} Norwegian Society of Geriatrics, Oslo, Norway
^{bb} MACVIA-LR, Contre les maladies chroniques pour un vieillissement actif en Languedoc Roussillon, European Innovation Partnership on Active and Healthy Ageing Reference Site, France
^{bc} University Hospital, Nîmes, France
^{bd} Assistant Director General, région Languedoc-Roussillon, France
^{be} Directeur Général Adjoint, Montpellier University Hospital, Montpellier, France
^{bf} Assistant Director General, Nîmes University Hospital, Nîmes, France
^{bg} Medical Commission, Montpellier University Hospital, Montpellier, France
^{bh} Emergency Department, Nîmes University Hospital, Nîmes, France
^{bi} Department of Physiology, Montpellier University Hospital, Montpellier, France
^{bj} Vice President for Research, University Montpellier 1, Montpellier, France
^{bk} Directeur général, University Hospital, Montpellier, France
^{bl} Dean, Montpellier Medical School, Montpellier, France
^{bm} Président, University Montpellier, Montpellier, France
^{bn} Président, région Languedoc-Roussillon, France

ARTICLE INFO

Article history:

Received 28 July 2014

Accepted 28 July 2014

Available online 16 September 2014

Keywords:

Active and healthy ageing

Falls

Prevention

MACVIA-LR

European Innovation Partnership

ABSTRACT

Falls represent a major cause of burden and death in older adults. The MACVIA-LR (fighting chronic diseases for active and healthy ageing in Languedoc-Roussillon) falls initiative is a cross-cutting Living Lab based on the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) at the regional level. It covers all action plans (A1, A2, A3, B3, C2 and D4) of the EIP on AHA. The Living Lab will: (i) raise awareness, (ii) drive attitude change with respect to falls and falls prevention and (iii) improve access to information on falls prevention. It aims to reduce fall-related hospitalisations by 30% in 2020 in the région Languedoc-Roussillon (LR). It includes: (i) a falls prevention clinic for the assessment of subjects (with a falls risk) in the two teaching hospitals of Montpellier and Nîmes, (ii) the Regional Ageing Institute (CARSAT-LR), (iii) the Low Vision Institute of Nîmes, (iv) the Lattes Social Welfare Centre, (v) the home automation Institut méditerranéen des métiers de longévité, (vi) teaching, training and coaching as well as (vii) industrial partnership. Two care pathways have been developed (stroke and falls) and are being applied to remote rural areas of the région. The MACVIA-falls prevention initiative is an output of the EIP on AHA.

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1. Introduction

European Innovation Partnerships (EIP) attempt to enhance EU competitiveness and tackle societal challenges by fostering innovation. Active and Healthy Ageing (AHA) is a major societal challenge common to all countries and to all populations [1]. Ageing is intertwined with socioeconomic inequalities, is an under-appreciated cause of poverty and hinders economic development, particularly in underserved populations and in women. AHA needs to be promoted very early in life to be successful. The EIP on AHA is deployed in 3 areas and 6 action plans [2] (Table 1).

The région Languedoc-Roussillon (LR) is the umbrella organisation for an interconnected and integrated project on AHA. It covers the 3 pillars of the EIP on AHA [3]. All of the sub-activities (A1, A2, A3, B3, C2 and D4) are included in MACVIA-LR which has a strong political commitment and involves all stakeholders (public, private, patients and policy makers). It is one of the reference sites of the EIP on AHA.

Falls represent a major cause of burden and death in older adults. Approximately 30% of people over the age of 65 fall each year, and one third of them are repeated fallers. Falls are the most serious and frequent home accidents. The WHO has estimated that, since 2010, 540,000 people have died due to a fall [4]. Falls are

Table 1

Areas and action plans of the EIP on AHA.

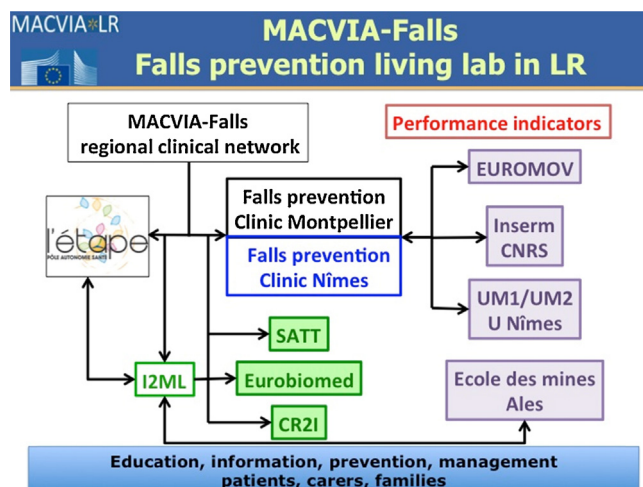
<i>Prevention of diseases and health promotion</i>
Innovative ways to ensure that patients adhere to their treatment (A1)
Innovative solutions for personalised health management, with focus on falls prevention (A2)
Action for preventing functional decline and frailty, with a particular focus on malnutrition (A3)
<i>Care and cure</i>
Scaling up and replication of successful innovative integrated care models for chronic diseases amongst older patients, such as through remote monitoring (B3)
<i>Active and independent living of older adults</i>
By improving the uptake of interoperable independent living solutions including guidelines for business models (C2)
<i>Horizontal topics</i>
Networking and knowledge sharing on innovation for age-friendly environments (D4)

EIP: European Innovation Partnership; AHA: Active and Healthy Ageing.

caused by numerous factors including mental health disorders [5], depression [6], impaired vision, certain medications (especially psychotropic drugs) [7], decreased activity of daily living and impaired cognition. A multidisciplinary approach is therefore optimal [8]. Approximately 30% of falls result in an injury that requires medical attention, with fractures occurring in approximately 5% and hip fractures in 1% [9–11]. Falls are the third leading cause of years lived with disability and are one of the leading causes for hospitalization. Falls can also have psychological consequences resulting in reduction of physical function and social interaction. Falling puts a strain on the family and is an independent predictor of admission to a nursing home. Falls in nursing homes are common [12,13], and the rate is much higher than in ambulatory older subjects [14]. Falls represent around 15% of overall hospital admissions. Confirmed diagnoses of fractures of the femur account for 10% of overall admissions [15], and fractures in nursing homes represent between 1 to 2% [16].

Falls are also the most common type of inpatient accident, and account for up to 70%. Approximately 30% of hospital patient falls result in physical injury, with 4 to 6% resulting in serious injury [17].

According to the European Network of Living Labs (ENoLL) (<http://www.openlivinglabs.eu>), a Living Lab is a real-life test and experimentation environment where users and producers co-create innovation, Public-Private-People Partnerships (PPPP) fostering user-driven open innovation. It allows research results to be deployed in real life for all users.

**Fig. 1.** The MACVIA Falls Living Lab.

The MACVIA-LR falls initiative is a cross-cutting Living Lab based on the EIP on AHA at the regional level. It covers all of the action plans (A1, A2, A3, B3, C2, and D4) of the EIP on AHA. The Living Lab will: (i) raise awareness, (ii) drive attitude change with respect to falls and falls prevention, and (iii) improve access to information on falls prevention (<http://www.chu-montpellier.fr/fr/acteurs-de-sante/prises-en-charge-specifiques/personnes-agees/projet-macvia-lr/>) (Fig. 1).

The Languedoc-Roussillon region (budget of 1.2 billion €, 3200 members) has the following mission: to address the issues of education, training, economic development, long-term national and regional development, research and public health. Social care is vital (highest population growth rate in Metropolitan France) and the region has made important investments in the training of health and primary prevention (health education programme for 15–25 years old) (Fig. 2).

2. Falls prevention clinics (A2)

2.1. Montpellier university hospital

The falls prevention clinic of the Montpellier hospital is interconnected with a centre that includes other activities on falls (Table 2).

The LR Balance and Falls Prevention Clinic is based in the Montpellier university hospital (CHRU). It is a specialist medical clinic for people who have fallen or who have been screened by their general practitioner (GP) as having a significant risk of falling (people who complain of fear of falling, balance disorders, dizziness, low muscle strength in the lower limbs). In accordance with their GP, some of the patients have been screened through public awareness/information campaigns organized by the different municipalities around Montpellier.

Every year, the LR Balance and Falls Prevention Clinic tests around 200 patients aged 65 years or above. Patients at risk of falls (or recurrent falls) benefit from a 3-hour geriatric multidimensional assessment by a geriatrician and a physiotherapist. Based on this first assessment, the clinical assessment may be supplemented at the same time by other examinations (neurologist, ophtalmologist, ENT, dietician, social worker) [18]. If needed, a bone density scan is performed to check for osteoporosis, as recommended recently [19–21]. Based on this comprehensive examination, a management plan for falls and fracture prevention is given to the patient and mailed to the referent physician. This plan includes tailored physical exercises to improve balance, muscle strength, flexibility, and motor coordination. Documents are also given to the patient (ProFouND tools, in particular) [22] (http://www.chu-montpellier.fr/fileadmin/Docutheque/Trippli_PreventionChute_1112_200ex.pdf). The examination is complemented by the home visit of an occupational therapist. Depending on the results of the assessment, patients may be oriented towards physical activity training groups developed in collaboration with city councils and the University Department of Science of Physical Activities and Sports. A network of specialists particularly interested in falls prevention (physiotherapists, occupational therapists) has been created, with regular meetings to disseminate new evidence in falls prevention. <http://www.cdomk34.fr/index.php/newsletter/archive/view/listid-1-mailinglist/mailid-58-invitation-du-cdomk34>

The LR Balance and Falls Prevention Clinic has a local recruitment of people at risk of falls and is a resource centre for GPs and hospitals throughout the area. It is also a research and teaching centre that helps to coordinate research (in link with Euromov, M2H), education (in link with STAPS), and dissemination in the field of falls prevention in LR. The clinic provides its experience and helps to create falls prevention consultations and day hospitals throughout the region.

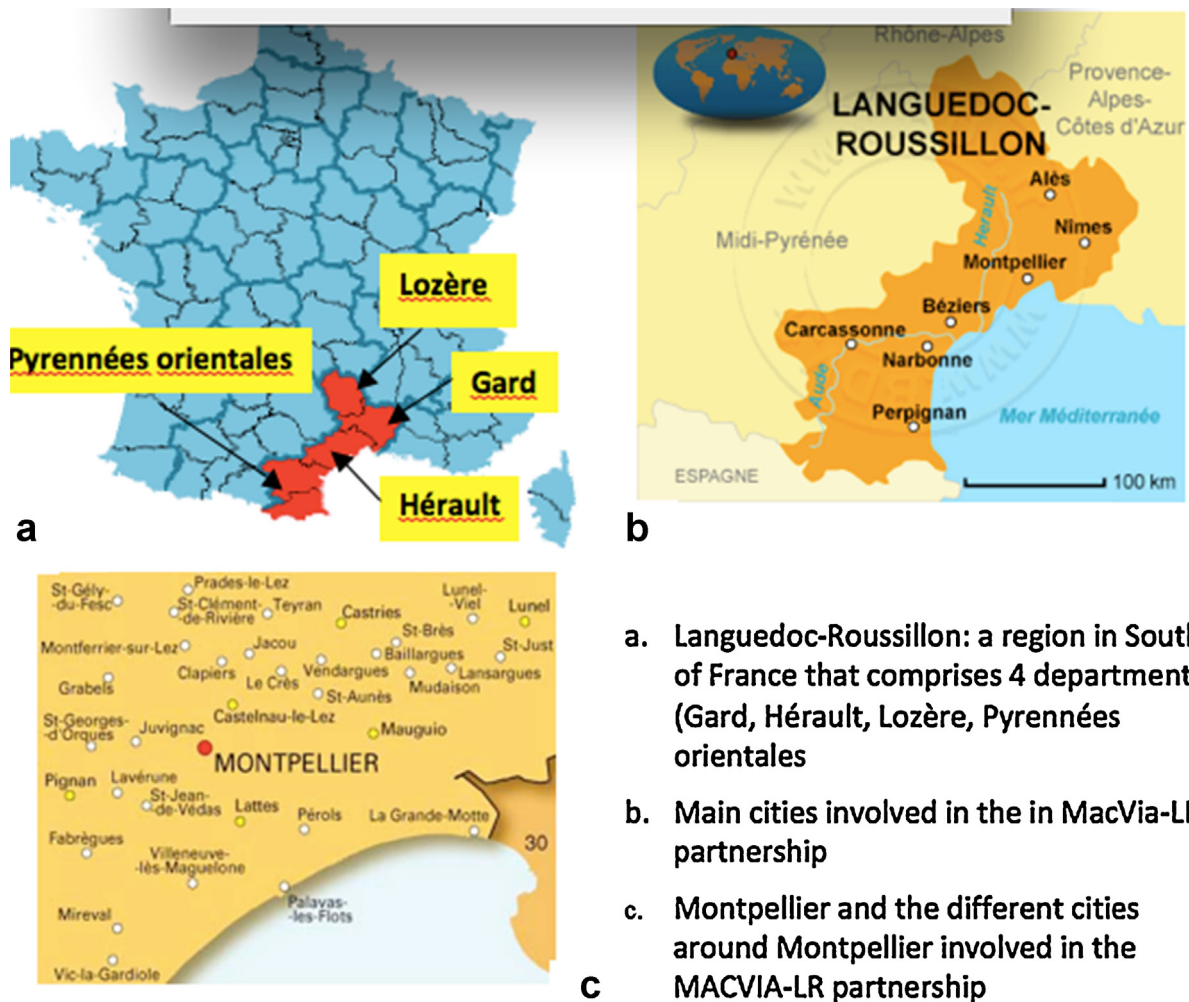


Fig. 2. The Languedoc-Roussillon Region.

The interoperable ICPs for falls prevention uses DXCare[®] (MedaSys, <http://www.medasys.fr> and Orange business service (<http://www.orange-business.com>). This is the most common ICT tool used in French hospitals. Also operational in SaaS (Software-as-a-Service) mode, DxCare[®] allows procedures and coding to be collected within the patient records, and offers flexibility of implementation. It is operational in Montpellier (IPSoins[®]) [23].

Behavioural and psychological symptoms and depression predict falls among nursing home residents, independently of physical performance and psychotropic drugs [7]. As an example, lavender olfactory stimulation may reduce agitation and falls in elderly nursing home residents [24]. The Altera group has developed a programme of cognitive stimulation activities using touchpads adapted to nursing home residents with cognitive impairment (<http://www.altera.com>). The objective of the ongoing study conducted in 50 nursing homes in the LR region is to demonstrate that Kodro may improve quality of life and prevent cognitive decline, behavioural disturbances and falls in nursing home residents with cognitive deterioration (<http://www.kodro.fr>).

2.2. Nîmes university hospital

The physiotherapy and rehabilitation centre of Nîmes university hospital accommodates patients suffering from loss of

- Languedoc-Roussillon: a region in South of France that comprises 4 departments (Gard, Hérault, Lozère, Pyrénées orientales)
- Main cities involved in the in MacVia-LR partnership
- Montpellier and the different cities around Montpellier involved in the MACVIA-LR partnership

autonomy, in particular further to a fall. Since 1995, it has been developing programmes for the recovery of postural control and to enable patients to regain their autonomy. In these programmes, the patients benefit from care and support until they return to their place of residence (Mobile EGERlteam). The centre has a clinical, instrumental, and technical evaluation platform for postural control. Moreover, patients at risk of fall (especially those with neurodegenerative diseases and orthopaedic disorders) are screened in the centre. It functions in association with the Memory centre and implements physical activity prevention programmes (Table 3).

3. Regional ageing institute (CARSAT-LR) and independent living (C2)

CARSAT-LR is a member of the National Social Security organisation. It participates actively in the Living Lab Falls-MACVIA-LR project within the framework of its Institut Régional du Vieillissement (Regional Ageing Institute) which includes 5 operational centres:

- an observational centre;
- an approval and evaluation centre;
- a global and flexible office for all services to simplify access and provide advice and guidance to retired or pre-retired social

Table 2

Regional centre for falls prevention and balance (Gerontology centre, Montpellier).

Activity	Partnering organisation	Description of activity
Falls prevention clinic	Montpellier teaching hospital	Multisectoral 3-hr clinic in which subjects at risk of fall benefit from a comprehensive geriatric assessment
Coaching and training	Master 2 GESAPPA (STAPS) University degree PEM-ES	For students, physicians, other health care professionals, social workers Training of health care professionals http://www.univ-montp1.fr/l_universite/ufr_et_instituts/ufr_staps/formations/master_staps
ICPs in the région Languedoc-Roussillon	Physicians Pharmacists Physiotherapists Occupational therapists Nurses Social workers	http://www.lab-epsilon.fr/upload/diplomes/Plaquette-DU-PEM-ES.pdf An ICP for falls prevention is being developed to allow patients living in remote rural areas to benefit from a falls prevention scheme (see 6) Dissemination and implementation of best practices in falls prevention using ProFoUND documents http://www.profound.eu.com http://www.cdomk34.fr/index.php/newsletter/archive/view/listid-1-mailinglist/mailid-58-invitation-du-cdomk34
Interaction with social workers	Montpellier Hospital ETAPE (CCAS Lattes) CARSAT	
Physical activity training	Master 2 GESAPPA (STAPS)	Students of GESAPPA are working with cities around Montpellier to train patients at risk of falls
Dissemination to lay public	Among cities around Montpellier, Lattes (ETAPE), Prades, Juvignac, Lodève (Fig. 2)	Information on physical activity training and link with GESAPPA activities Information on falls prevention http://www.midilibre.fr/2013/11/18/cqastelnau-le-lez-conference-sur-la-prevention-des-chutes-des-personnes-agees,784927.php http://www.ville-juvignac.fr/index.php/Actualites?idpage=92&idmetacontenu=2945&iddossiercontenu=8 http://www.etape-pole-autonomie-sante-lattes.org/index.php?option=com_content&view=category&layout=blog&id=8&Itemid=152
Research activities	Euromov LIRMM, École des Mines d'Alès	Improvement of walking (postural and walking complexity assessment and intervention)
Links with the private sector	Eurobiomed	
Links with national and international activities	SFGG EUGMS Profound	

ICP: integrated care pathway; STAPS: science of physical activities and sports; GESAPPA: health management by appropriate physical activity Master 2; SFGG: French Society of geriatrics and gerontology; EUGMS: European Union Geriatric Medicine Society; ETAPE: Lattes social and welfare community centre; CCAS: social and welfare community centre.

security contributors who are at risk of frailty. As soon as a patient at risk of fall is detected, a plan is established in order to direct him/her towards identified preventative workshops or adapted establishments (prevention centres);

- an advisory centre for relevant training;
- a research, study and experimentation centre.

4. Low vision institute (A2, D4)

The impairment of vision is associated with a loss of function in activities of daily living. Avoidance of physical activity and consequent reduced functional capacity is common in older people with visual impairment and is an important risk factor for falls [25,26]. The ARAMAV institute in Nîmes is a multi-disciplinary centre which aims to improve the vision of adults with a severe visual impairment. It includes training for improved vision by an ophthalmologist and an orthoptist [27]. This evaluation enables environmental and behavioural interventions to be determined with occupational therapists and/or psychologists to increase mobility and quality of life.

5. Age-friendly environments (D4)

5.1. Pôle autonomie en santé in Lattes (PAS), étape

PAS proposes multisectoral innovative solutions to enable older and/or handicapped people to maintain independent living (Fig. 2). The PAS project is managed by the city of Lattes' Social Welfare Centre and is comprised of elected representatives of the city, the département de l'Hérault (General Council) as well as citizens (<http://www.etape-pole-autonomie-sante-lattes.org>). It includes representatives of clubs and societies for senior citizens. PAS offers

a free municipal public service dedicated to supporting the population in the choice and testing of technical and technological aids: ETAPE. PAS provides information for a database in accordance with the ISO 999/2011 norm for assistive products available in the centre. ETAPE promotes ICT products and services adapted to older people's needs through the promotion of better access to urban services, higher autonomy and home services. It is participating in a pilot study to create a national database for the CNSA (Caisse nationale de solidarité pour l'autonomie). ETAPE is part of the Smart Eco City[®] of the Montpellier Agglomération. Around 1100 persons (handicapped individuals, social workers, family members) visited ETAPE in 2013. Falls prevention represents a large percentage of the needs of these subjects.

Given its mission of technology watch and referencing of innovative solutions for autonomy, ETAPE collaborates with approximately one hundred companies in order to test and demonstrate their products. This mission enables ETAPE to work with these companies to develop protocols of experiment and feedback with regards to their innovative solutions.

There are close links between ETAPE, the Balance and Falls Prevention Clinic of the Montpellier hospital and I2ML.

Satellite centres are being implemented in the Region and the first one is situated in Lodève (remote rural area in the Hérault department).

6. I2ML, home automation and silver economy (D4)

The I2ML (Institut méditerranéen des métiers de longévité) Fondation Partenariale was established in 2011 by the University of Nîmes and 20 founder members and partners, including the Région LR, the Nîmes Métropole, the Conseil Général du Gard, the university hospital of Nîmes, insurance companies and other

Table 3

Nîmes university hospital centre for falls prevention and balance.

Activity	Partnering organisation	Description of activity
Falls prevention clinic	Nîmes University hospital EGERI	Physical medicine and rehabilitation assessment to evaluate the risk of falls Home fall risk assessment: The EGERI team provides home visits by a geriatric, physical doctor and occupational therapist for the assessment of risk factors and modification of environmental hazards for elderly subjects who are experiencing a decline in safety or independence and/or are planning for future needs
Interaction with social workers	Local Hospitals MAIA (Nîmes) EGERI CARSAT I2ML	
Physical activity training	One-day hospitalisation	Balance and physical training by physical therapist, occupational therapist and physical education teacher
Dissemination to lay public	MAIA	MAIA (home for integration and autonomy) is a centralised desk for public information on geriatric medical and social resources for the prevention of functional and cognitive decline
Research activities	Research department of Nîmes University Hospital CEDMH Links with: Euromov, M2H University Institute of technology of Nîmes LIRM, Engineering school of Alès (École des Mines d'Alès)	The centre for the assessment of assistive technology devices of Nîmes University provides Research and Development work relating to assistive technology for disabled or elderly persons in partnership with industry
Links with national and international activities	SFGG ESPRM ISPRM WFNR AFEG CNSA INRS	

EGERI: multidisciplinary geriatric team; CARSAT: retirement and occupational health insurance agency; SFGG: French Society of geriatrics and gerontology; ESPRM: European Society of Physical and Rehabilitation Medicine; ISPRM: International Society of Physical and Rehabilitation Medicine; WFNR: World Federation for Neuro Rehabilitation; AFEG: French Association of occupational therapy in geriatrics; CNSA: National Solidarity Fund for Autonomy; INRS: National Institute of Research and Security.

private companies. It has contributed to the emergence of a Silver Economy sector in LR. This Living Lab was first established as a centre for home automation, including the conception, improvement and innovation of products, services, interfaces and spaces. It was also developed for the user, the family and the practitioners involved in the conception process. It is run by five collaborators (an engineer specialist in home automation, an environmental psychologist with a specific interest in older people, a designer-ergonomist). This group is reinforced by experts in regulations, law, ethics, health, home automation and nutrition.

7. Education, training and coaching

The Universities of Montpellier 1, 2, 3, the major training centres in Europe, the University of Nîmes and the École des Mines d'Alès (Alès technology and engineering university) are involved in training activities. Founded in 1843 in Alès, the École des Mines has developed and adapted to changes in industry and society. Founded to study the mining industry, it is now an engineering school (Grande École) with an international reputation that forms multidisciplinary engineers. (<http://www.mines-ales.fr>)

ETAPE is used by the INRS (Institut national de recherche et sécurité, <http://www.inrs.fr>) for the training of occupational health and safety.

ITEV: the Institut transdisciplinaire d'étude du vieillissement (transdisciplinary institute for ageing studies (<http://www.itevephe.univ-montp2.fr/>)) is an institute of the École pratique des hautes études (<http://www.ephe.sorbonne.fr>). Two teaching courses are effective in Montpellier in collaboration with the CNAM: (i) for the

professional care givers of older people and (ii) for nurses in nursing homes.

Trans InnovLongévit   (investissement d'avenir, Agence nationale de la recherche <http://www.agence-nationale-recherche.fr>) is a transdisciplinary, multisectoral, private-public partnership whose aim is to provide training and coaching on frailty, falls, ageing and independent living. It uses ICT teaching of 3 universities (Paris, Montpellier, Strasbourg: <http://www.aunege.fr>) and French speaking countries.

Master Institute T  l  com ICT and health: a joint training course that includes University Montpellier 1 and 2, the   cole des Mines d'Al  s and the T  l  com Institute for the multidisciplinary training of students (from ICT, physics, biology, medicine, pharmacy or sports) and citizens (<http://www.telecom-montpellier.fr>).

8. Research activities

Basic and translational research is being carried out by the Inserm and CNRS units of the region. Moreover, EuroMov is a nexus for research, technology, and innovation in the Movement Sciences. EuroMov conducts state-of-the-art research on human normal and pathological movements, with high-level academic and professional training, technological development and business incubation (<http://www.euromov.eu>). The new EuroMov building (2500 m²), in the north of Montpellier, hosting all activities of the centre, was launched in June 2013, during the international conference Health in motion (organized by the EuroMov research unit -Movement to Health (M2H, Montpellier-1 University)). (<http://www.euromov.eu>)

9. Care pathways at the regional level with physicians (A3, B3), pharmacists (A1), nurses and social workers (A3, B3, D4)

Ninety-seven percent of French private pharmacists use the Dossier Pharmaceutique® (DP®). The vast majority of patients agree to be followed by the DP®. Coverage includes over 35% of people in France (all ages). A project in collaboration with pharmacists and nurses will screen for possible falls in subjects over 75 years of age visiting pharmacies and nurses. This programme will include measures that can be taken to reduce the incidence of falls. It will also include an assessment of psychotropic drugs and their relation to falls using the DP® (A1). Based on the results of the project, an integrated care pathway for falls prevention will be established between pharmacists, nurses, primary care and an existing falls prevention clinic. If needed, adapted physical activity, interactions with social workers (CARSAT) and age-friendly coaching (D4) are proposed to the patient. The Sports Faculty in Montpellier and Euromov implement adapted physical activity programmes (the “posture, balance, motor skills, and education for health” method: méthode posture-équilibre-motricité et éducation pour la santé)(PEM-ES), available in the main cities of France (activité physique adaptée à la santé: APA, C2) (<http://www.apa-sante.fr>)

10. Care pathways for stroke (A1, A2, A3, B3, C2, D4)

Falls are one of the most common medical complications after stroke, with a reported incidence of up to 70% in the first year post-stroke [28]. The best medical approach to manage this potentially life-threatening emergency and its long-term functional consequences is early intravenous or intra-arterial infusion of thrombolytic agents and the admission to a Stroke Unit. In the Stroke Unit, a multidisciplinary team will integrate and coordinate the different aspects of acute stroke management such as maintaining cerebral homeostasis, cardio-vascular monitoring, early mobilisation and neuro-rehabilitation. In LR, a care pathway for the prevention and management of stroke was initiated in 2010 (Plan national d'action AVC 2010-2014, <http://www.sante.gouv.fr>). In the first phase of the plan, 10 actions were initiated in LR including information and prevention, care pathways coordination and coaching. In the region, two different situations exist and can be compared:

The coastal region (2.6 million inhabitants) has 5 integrated neuro-vascular units (stroke units). Each stroke patient is urgently (within the hour) sent to a stroke unit. The patient receives immediate care by a multidisciplinary team. An emergency MRI is carried out and a decision is made with regards to the administration of thrombolytic treatment. A rehabilitation programme is then set up. The stroke unit within the Montpellier University hospital is equipped with interventional neuroradiology for thrombectomy.

The Lozère department (remote rural area, 80,000 inhabitants) does not have a stroke unit. The general hospital is equipped with an MRI scanner that is always available for emergencies, as well as emergency physicians adequately trained in thrombolysis. Telehealth is used to enable neurologists from the Montpellier University Hospital to make urgent medical decisions. This procedure reduces post-stroke disability and complications as much as possible. Prevention and rehabilitation programmes are significantly linked to the risk of post-stroke falls.

A dual approach has been initiated: stroke units in emergency departments and tele-health-based emergency in Lozère. The first results indicate 3 positive elements:

- better knowledge of the warning signs of a stroke and of how surrounding people should react;

- earlier and better care in the stroke unit;
- better adapted rehabilitation programmes.

This “Hit hard and fast” method is managing to reduce the number of people who suffer from post-stroke disability in LR.

11. Interactions at the local, regional, national and European levels

11.1. Public partnership

The Living Lab includes most public institutions of the Languedoc-Roussillon which have an interest in a falls prevention initiative (Table 4). All of these institutions are linked with social workers through municipal social and welfare community centres (CCAS) as well as the ARS and CARSAT.

11.2. Private partnership

Members of the Living Lab include the Conseil régional LR de l'ordre des médecins (Regional medical board), the URPS médecins, pharmaciens, and nurses (Union régionale des médecins libéraux du LR), the University Department of General Medicine, and the Conseil régional LR de l'ordre des pharmaciens (Regional pharmacy board).

Industrial competitiveness is managed through Eurobiomed (French government “competitive cluster” (<http://www.eurobiomed.org>)) and the silver economy (I2ML). The Eurobiomed biotechnology cluster federates 216 members, mainly SMEs, 5 universities, higher education establishments, 400 research laboratories, 4 university hospitals and pharmaceutical groups.

In Europe, spa therapy, largely prescribed for osteoarthritis, particularly for the knees, was found to be effective [29,30]. The Balaruc-les-Bains Thermal Baths offer a wide range of water, steam, and mud treatments for rheumatologic diseases. It is the third largest thermal spa in France, and does its utmost to welcome over 45,000 patients each year. Balaruc is developing a specific falls prevention initiative.

AxLR is a technology transfer acceleration company. It specialises in helping innovative projects derived from academic research reach maturity and commercialization. This single window access increases the efficiency of the innovation system and the competitiveness of the industry (<http://www.axlr.com>).

CR2i (Centre for research and industrial innovation) aims to produce closer medical diagnostics and new technologies. Supported by the cluster Eurobiomed, CR2i is dedicated to ICT and the health sector, bringing together actors in diagnosis, therapy and new technologies. CR2i develops and industrializes new solutions for health diagnosis and telemedicine, particularly in the areas of personalized medicine, ambulatory medicine and telemedicine (<http://www.eurobiomed.org/pdf>).

11.3. Patients' organisations

ETAPE serves as a mediator between users and professionals from the medico-social sector whose mission is to help people who are losing their autonomy to stay at home. ETAPE collaborates with the main patients' organisations in the LR region: Association des paralysés de France, Association France Alzheimer, Association française de myopathie téléthon, la Fédération des aveugles et amblyopes de France, Comité de liaison et de coordination des personnes handicapées de l'Hérault, le CLIC maillage, le groupe pour l'insertion des personnes handicapées physiques du Languedoc-Roussillon, Association France parkinson, Cap horizon (blindness).

Table 4

Public partnership.

	Acronym	Organisation (French)	Organisation (English)
Region	CR-LR	Conseil régional Languedoc-Roussillon	Regional Council Languedoc-Roussillon
Department		Conseil général Hérault (34) Conseil général Gard (30)	General Council Hérault state General Council Gard state
City		Montpellier agglomération Nîmes agglomération Lattes Juvignac Lodève Prades-le-Lez	Montpellier area Nîmes area
Teaching and research	UM1, UM2, UM3 UNîmes	Université Montpellier 1,2,3 Université de Nîmes École des Mines d'Alès	University of Montpellier 1,2,3 University of Nîmes Engineering school of Alès
Teaching hospitals		CHRU de Montpellier CHU de Nîmes	University hospital of Montpellier University hospital of Nîmes
National or regional agencies	ANR	Agence nationale de la recherche	National Research Agency
	ARS	Agence régionale de santé	Regional Health Agency
	CARSAT	Caisse d'assurance retraite et de la santé au travail	Retirement and occupational health insurance agency
	CNSA	Caisse nationale de solidarité pour l'autonomie	National Solidarity Fund for Autonomy
	CPAM	Caisse primaire d'assurance maladie	Regional health insurance agency
	HAS	Haute Autorité de santé	National Authority for Health
	INRS	Institut national de recherche et de sécurité, pour la prévention des accidents du travail et des maladies professionnelles	
	CARSAT	Caisse d'assurance retraite et de la santé au travail	Retirement and occupational health insurance agency
	CNSA	Caisse nationale de solidarité pour l'autonomie	National Solidarity Fund for Autonomy
	CPAM	Caisse primaire d'assurance maladie	Regional health insurance agency
	HAS	Haute Autorité de santé	National Authority for Health
	INRS	Institut national de recherche et de sécurité, pour la prévention des accidents du travail et des maladies professionnelles	
	CCAS	Centre d'action sociale	Social and welfare community centre

11.4. French national partnership

I2ML is a founder member of the National Living Labs forum in health and independent living and represents the Living Lab Falls-MACVIA-LR. I2ML is also a member of CNR santé.

The Living Lab Falls-MACVIA-LR collaborates with different French teams in different educational and research projects in pre-frail and frail older people with the aim to prevent falls. The Living Lab Falls-MACVIA-LR participates in the French group that has been assembled by Inserm to write guidelines on “physical activity and falls” and in the falls interest group (created in 2014 within the French Society of Geriatrics and Gerontology SFGG). Guidelines and teaching programmes are provided at the annual meeting of the SFGG.

11.5. European Union

MACVIA-LR is one of the reference sites of the EIP on AHA [3]. It participates in the Prevention of Falls Network for Dissemination (ProFouND), a new EC-funded initiative dedicated to the dissemination and implementation of best practices in falls prevention across Europe (<http://www.profound.eu.com>). The Living Lab Falls-MACVIA-LR collaborates with the Falls interest group created in 2014 within the European Union Geriatric Medicine Society Academic Board.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

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- CARSAT: Retirement and occupational health insurance agency (*Caisse d'assurance retraite et de la santé au travail*)
 CCAS: Social and welfare community centre (*Centre d'action sociale*)
 CEDMH: Center for the assessment of assistive technology devices - Handicap (*Centre d'évaluation des dispositifs médicaux - handicap*)
 CNSA: National Solidarity Fund for Autonomy (*Caisse nationale de solidarité pour l'autonomie*)
 CPAM: Regional health insurance agency (*Caisse primaire d'assurance maladie*)
 CDSS: Clinical Decision Support System (*Système de support à la décision clinique*)
 CHU: University hospital (*Centre hospitalier universitaire*)
 CNOM: National board of Physicians (*Conseil national de l'ordre des médecins*)
 CNOP: National board of Pharmacists (*Conseil national de l'ordre des pharmaciens*)
 CNOMK: National board of Physiotherapists (*Conseil national de l'ordre des masseurs Kinésithérapeutes*)
 CR2i: Centre for Research and Industrial innovation (*Centre de recherche et d'innovation industrielle*)
 DeProPass: Screening of the co-morbidities of chronic diseases (*Dépistage des Pathologies associées aux maladies chroniques*)
 DUMG: University Department of General Medicine (*Département Universitaire de Médecine Générale*)
 DP[®]: ICT pharmaceutical file (*Dossier pharmaceutique*)
 EGERI: Multidisciplinary geriatric team (*Équipe Gériatrique de Réinsertion et d'Intervention*)
 ELHEIS: European Health and Life Expectancy Information System
 ESPRM: European Society of Physical and Rehabilitation Medicine
 ETAPE: Lattes Social and welfare community centre (*Centre d'Action Sociale de Lattes*)
 EU: European Union
 EUGMS: European Union Geriatric Medicine Society
 EUREGHA: European Regional and Local Health Authorities
 EUROBIOMED: Cluster of health sector involving PACA and LR regions (*Pôle de compétitivité de la filière santé PACA-LR*)
 EUROMOV: European nexus for research, technology, and innovation in the Movement Sciences
 EIP on AHA: European Innovation Partnership on Active and Healthy Ageing
 FP: Partnership foundation (*Fondation partenariale*)
 GESAPPA: Health management by appropriate physical activity Master 2 (*Master 2 Gestion de la Santé par l'Activité Physique Adaptée*)
 HAS: National Authority for Health (*Haute Autorité de santé*)
 HLY: Healthy life years
 ICT: Integrated care pathway
 ICT: Information and Communications Technology (*Technologies de l'Information et des Communications*)
 IDEFI: Excellence project on innovative teaching/coaching (*Initiative d'Excellence en Formations Innovantes*)
 INSERM: National Institute of Health and Medical Research (*Institut National de la Santé et de la Recherche Médicale*)
 INRS: National Institute of Research and Security for the prevention of occupational accidents and diseases (*Institut National de Recherche et de Sécurité*)
 ISPRM: International Society of Physical and Rehabilitation Medicine
 ITEV: Transdisciplinary Institute for the study of ageing (*Institut Trans-Disciplinaire d'Etude du Vieillessement*)
 I2ML: Mediterranean institute of professions related to Ageing (*Institut Méditerranéen des métiers de longévité*)
 LIRMM: Montpellier Laboratory of Informatics, Robotics and Microelectronics (*Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier*)
 LR: Languedoc-Roussillon (region) (*Région Languedoc-Roussillon*)
 MACVIA-LR: Fighting chronic diseases for active and healthy ageing in Languedoc-Roussillon (*Contre les Maladies Chroniques pour un Vieillessement Actif en Languedoc-Roussillon*)
 MAIA: Home for integration and autonomy in Alzheimer's disease (*Maisons pour l'autonomie et l'intégration des malades d'Alzheimer*)
 MH2: Movement to Health
 NCD: Non-communicable disease
 PAS: Health autonomy centre (*Pôle autonomie santé*)
 PAERPA: Care pathway for the elderly at risk of loss of autonomy (*Parcours de santé des personnes âgées en risque de perte d'autonomie*)
 PEM-ES: University degree "Prevention of loss of autonomy and falls in the elderly - Postural equilibrium motor skills and health education method" (*Diplôme Universitaire (UM1)*)
 PHC: Primary health care
 ProFouND: Prevention of Falls Network for Dissemination
 SATT: Acceleration of technology transfer companies (*Sociétés d'accélération du transfert de technologies*)
 SFGG: French society of geriatrics and gerontology (*Société française de gériatrie et gérontologie*)
 STAPS: Science of physical activities and sports (*Sciences et techniques des activités physiques et sportives*)
 TLI: Excellence project on innovative teaching in gerontology (*Trans Innov Longévité*)
 UM1: University Montpellier 1 (*Université Montpellier 1*)
 UM2: University Montpellier 2 (*Université Montpellier 2*)

Glossary

APEG: French Association of occupational therapy in geriatrics
 AHA: Active and healthy ageing (*Vieillessement actif et en bonne santé*)
 ANR: National Research Agency (*Agence nationale de la recherche*)
 APA: Physical activity adapted to health care (*Activité physique adaptée et santé*)
 ARAMAV: Association for the integration of the blind and partially sighted (*Association de réinsertion des aveugles et malvoyants*)
 ARS: Regional Agency for health (*Agence régionale de santé*)

UM3: University Montpellier 3 (*Université Montpellier 3*)

UNîmes: Nîmes University (*Université de Nîmes*)

URPS Infirmiers: Regional union of private nurses (*Union Régionale des Professionnels de Santé Infirmiers Libéraux Languedoc-Roussillon*)

URPS Médecins: Regional union of private physicians (*Union Régionale des Professionnels de Santé Médecins Libéraux Languedoc-Roussillon*)

URPS Pharmaciens: Regional union of private pharmacists (*Union régionale des professionnels de santé pharmaciens libéraux*)

WFNR: World Federation for Neuro Rehabilitation

WHO: World Health Organisation