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Hot topic in geriatric medicine: EIP on AHA column

MACVIA-LR, Reference site of the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) in Languedoc Roussillon



J. Bousquet^{a,*}, C. Bourquin^{b,1}, P. Augé^c, P. Domy^a, J. Bringer^d, M. Aoustin^e, T. Camuzat^b, R. Bourret^a, N. Best^f, O. Jonquet^g, J.E. de la Coussaye^h, J.M. Robine^{i,j,k}, A. Avignon^l, H. Blain^{m,n}, N. Giraudeau^o, D. Hève^e, C. Jeandel^m, I. Laffont^{n,p}, D. Larrey^q, C. Laurent^r, M. Noguès^s, J.Y. Pélissier^{n,t}, F. Radier-Pontal^u, E. Royère^v, A. Bedbrook^w, S. Granier^f, F. Abecassis^x, S. Albert^y, P.A. Adnet^m, B. Alomène^m, M. Amouyal^z, S. Arnavieille^{aa}, V. Attalin^{ab}, P. Aubas^{ac}, M. Badin^z, G. Baptista^m, B. Bardyⁿ, M.P. Battesti^e, O. Bénézet^{ad}, P.L. Bernardⁿ, C. Berr^{ae}, J. Berthe^v, J. Bockaert^{af}, C. Boubakri^m, A. Bourdin^{ag}, J.L. Bourrain^{ag}, G. Bourrel^z, V. Bouix^{ah}, J. Burille^{ai}, S. Cade^{aj}, D. Caimmi^{ag}, M.V. Calmels^{ak}, W. Camu^{al}, G. Cavalli^{am}, G. Cayla^{an}, R. Chiron^{ag}, B. Combe^{ao}, D.J. Costa^z, P. Costa^{ap}, M.C. Courrouy-Michel^{aq}, P. Courtet^{ar}, J.P. Cristol^{as}, F. Cuisinier^{at}, C. Daien^{ao}, M. Danko^{aq}, P. Dauenhauer^{au}, M. Dauzat^{av}, M. David^z, J.M. Davy^{aj}, D. Delignièresⁿ, P. Demoly^{ag}, H. Dhivert-Donnadieu^{ag}, G. Dray^{aw}, P. Dujols^{ac}, A. Dupeyron^{n,t}, G. Dupeyron^{ax}, O. Engberink^{n,ay}, P. Fesler^{az}, M. Gellerat-Rogier^{ba}, F. Gouzi^{bb}, F. Gressard^{bc}, D. Hoa^q, S. Jacquemin^{bd}, J.C. Gris^{be}, B. Guillot^{bf}, V. Handweiler^a, M. Hayot^{bb}, S. Jaber^{bg}, D. Jakovenko^{bh}, C. Jorgensen^{ao,bi}, L. Journot^{af}, M. Kaczorek^v, M. Lapierre^t, D. Laune^{bj}, M.S. Léglise^m, A. Le Quellec^{az}, F. Leclerc^{aj}, S. Lehmann^{bk}, B. Lognos^{z,bh}, J.M. Lussert^{bl}, K. Mandrickⁿ, V. Marmelatⁿ, P. Martin-Gousset^{bc}, A. Matheron^{ak}, G. Mathieu^z, G. Mercier^{bm}, P. Messner^{an}, C. Meunier^{bc,bn}, M. Mondain^{bo}, J. Morel^{ao}, D. Morquin^{bp}, P. Nérin^{bq}, G. Ninot^{ay}, F. Nouvel^{t,br,bs}, J.P. Ortiz^{bt}, G. Pandraud^u, M.P. Padelou^{ak}, J.L. Pasquié^{aj}, E. Pastor^{bc,bu}, S. Perreyⁿ, Y.M. Pers^{ao}, M.C. Picot^{ac}, J.P. Pin^{af}, N. Pinto^s, F. Portejoie^w, J.L. Pujol^{ag}, X. Quantin^{ag}, I. Quéré^{az}, N. Raffort^{cu}, S. Ramdaniⁿ, J. Reynes^{bp}, J. Ribstein^{az}, I. Rédini-Martinez^e, S. Richard^{bv}, K. Ritchie^{bw,bx}, C. Rolland^{by}, F. Roubille^{aj}, E. Roux^a, A. Salvat^{bz}, J.L. Savy^{ak}, Y. Stephan^{ay}, D. Strubel^{ca}, A. Sultan^l, G. Tallon^m, H. Tassery^{cb}, K. Torre^m, A. Uziel^{bo}, P. Van de Perre^{cc}, X. Vasquez^{cd}, J.M. Verdier^{ce,cf,cg}, G. Vergotteⁿ, L. Vian^{ch}, C. Viarouge-Reunier^a, F. Vialla^{ci}, F. Viart^{cj}, M. Villain^{ck}, E. Viollet^{n,t}, J. Ankri^{cl}, G. Berrut^{cm}, G. Crooks^{cn}, M.E. Joël^{co}, J.P. Michel^{cp}, B. Samolinski^{cq}, T. Strandberg^{cr}, B. Vellas^{cs}, J. Mercier^{bb,bv,ct}

Abbreviations: AHA, Active and Healthy Ageing; AIRWAYS ICPs, Integrated care pathways for airway diseases; AR, Allergic rhinitis; ARIA, Allergic Rhinitis and its Impact on Asthma; 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); CD, Chronic disease; CDSS, Clinical decision support system; CEDMH, Centre d'Expertise Dispositifs Médicaux–Handicap (Centre of expertise in medical devices and handicap); CENROB, Centre d'Expertise National en Robotique (National center of expertise in robotics); CHU, University hospital; CRD, Chronic respiratory disease; DP, Dossier Pharmaceutique; EIP on AHA, European Innovation Partnership on Active and Healthy Ageing; Etape, Lattes social and welfare community centre; EU, European Union; EUROMOV, European nexus for research technology, and innovation in the Movement Sciences; GAZLEN, Global Allergy and Asthma European Network; EVADIMM, Evaluation des Dispositifs Médicaux de Montpellier (Evaluation of medical devices in Montpellier); GARD, WHO Global Alliance against chronic Respiratory Diseases; HVC, Hepatitis virus C; I2ML, Institut Méditerranéen des métiers de longévité (Mediterranean Institute of longevity business); ICP, Integrated care pathway; LR, Languedoc-Roussillon; MACVIA-LR, Contre les Maladies Chroniques pour un Vieillessement Actif en Languedoc-Roussillon (Fighting Chronic Diseases for Active and Healthy Ageing); MASK, MACVIA-ARIA sentinel network; MS, Multiple Sclerosis; PAERPA, Parcours de soins des personnes âgées en risque de perte d'autonomie; PMR, Physical Medicine and Rehabilitation; SCI, Spinal Cord Injury; SCUAD, Severe Chronic Upper Airway Diseases; TBI, Traumatic Brain Injury; UM, Montpellier University; WHO, World Health Organization.

¹ Deceased author.

* Corresponding author.

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

- ^a University Hospital, Montpellier, France
- ^b Région Languedoc-Roussillon, Montpellier, France
- ^c University Montpellier, Montpellier, France
- ^d Montpellier Medical School, Montpellier, France
- ^e Agence Régionale de Santé, Montpellier, France
- ^f Nîmes University Hospital, Nîmes, France
- ^g Medical Commission, Montpellier University Hospital, Montpellier, France
- ^h Emergency Department, Nîmes University Hospital, Nîmes, France
- ⁱ Inserm Research Unit 988, Paris, France
- ^j Inserm Research Unit 710, Montpellier, France
- ^k École Pratique des Hautes Études (EPHE), Paris, France
- ^l Department of Endocrinology, Montpellier University Hospital, Montpellier, France
- ^m Department of Geriatrics, Montpellier University Hospital, Montpellier, France
- ⁿ EA 2991 Movement To Health, Euromov, University Montpellier 1, Montpellier, France
- ^o Dentistry school, University of Montpellier 1, Montpellier, France
- ^p Department of Physical and Medical Rehabilitation, Montpellier University Hospital, Montpellier, France
- ^q Department of Hepatology, University Hospital, Montpellier, France
- ^r I2ML, Fondation Institut Méditerranéen des Métiers de la Longévité, Nîmes, France
- ^s Caisse Assurance Retraite et Santé Au Travail Languedoc-Roussillon (CARSAT-LR), Montpellier, France
- ^t Department of Physical and Medical Rehabilitation, Nîmes University Hospital, Nîmes, France
- ^u Conseil Régional de l'Ordre des Pharmaciens, Maison des Professions Libérales, Montpellier, France
- ^v Pôle de compétitivité Eurobiomed PACA-Languedoc-Roussillon, Marseille, France
- ^w MACVIA-LR, Reference site of the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) in Languedoc Roussillon, European Innovation Partnership on Active and Healthy Ageing Reference Site, Montpellier, France
- ^x Fédération Pharmaceutique Méditerranéenne (FEDMED), Roujan, France
- ^y Agropolis International, Montpellier, France
- ^z University Department of General Medicine, Montpellier Medicine Faculty, Montpellier, France
- ^{aa} Digi-Health, Montpellier, France
- ^{ab} Avitiam, Montpellier, France
- ^{ac} Department of Public Health, Montpellier University Hospital, Montpellier, France
- ^{ad} Nîmes, France
- ^{ae} Inserm, U1061, Montpellier, France
- ^{af} CNRS, Institut de Génétique Fonctionnelle, Montpellier, France
- ^{ag} Department of Respiratory Diseases, Montpellier University Hospital, Montpellier, France
- ^{ah} Department of Pharmacy, Ales Hospital, Alès, France
- ^{ai} Société Publique Locale d'Exploitation de Balaruc-les-Bains, Balaruc-les-Bains, France
- ^{aj} Department of Cardiology, Montpellier University Hospital, Montpellier, France
- ^{ak} Centre Communal d'Action Sociale, Mairie de Juvignac, France
- ^{al} Department of Neurology, University Hospital, Montpellier, France
- ^{am} Institute of Human Genetics, CNRS, Montpellier, France
- ^{an} Department of Cardiology, University Hospital, Nîmes, France
- ^{ao} Department of Rheumatology, University Hospital, Montpellier, France
- ^{ap} Department of Urology, Nîmes Hospital, Nîmes, France
- ^{aq} Département des Sciences Sanitaires et Sociales, UM3, Montpellier, France
- ^{ar} Department of Psychiatry, University Hospital, Montpellier, France
- ^{as} Biology Department, Montpellier University Hospital, Montpellier, France
- ^{at} LBN EA 4203, Montpellier, France
- ^{au} Sanofi-Aventis, Montpellier, France
- ^{av} Department of Physiology, Nîmes University Hospital, Nîmes, France
- ^{aw} École des Mines, Alès, France
- ^{ax} Department of Ophthalmology, ARAMAV (Association Réinsertion Aveugles Malvoyants), Nîmes University Hospital, Nîmes, France
- ^{ay} EA4556 Epsilon, Université Montpellier 1, Montpellier, France
- ^{az} Internal Medicine Department, Montpellier University Hospital, Montpellier, France
- ^{ba} Montpellier, France
- ^{bb} Department of Physiology, Montpellier University Hospital, Montpellier, France
- ^{bc} L'ETAPE - Pôle Autonomie Santé, CCAS de Lattes, France
- ^{bd} Horiba, Montpellier, France
- ^{be} Department of Biology, University Hospital, Nîmes, France
- ^{bf} Department of Dermatology, Montpellier University Hospital, Montpellier, France
- ^{bg} Department of Anaesthesiology, Montpellier University Hospital, Montpellier, France
- ^{bh} Union Régionale des Professions de Soins Infirmiers Libéraux du Languedoc- Roussillon, Maison des Professions Libérales, Montpellier, France
- ^{bi} Institut de Recherche en Biothérapie, Montpellier, France
- ^{bj} Digi Health, Montpellier, France
- ^{bk} Institut de Médecine Régénératrice et de Biothérapie (I.M.R.B.), Inserm U1040, Institut de Génétique Humaine, CNRS-UPR1142, University Hospital, Montpellier, France
- ^{bl} Centre communal d'action sociale (CCAS), Mairie, Prades-Le-Lez, France
- ^{bm} Unité médico-économie, département de l'information médicale, University Hospital, Montpellier, France
- ^{bn} Lattes, France
- ^{bo} ENT Department, Montpellier University Hospital, Montpellier, France
- ^{bp} Department of Infectiology, Montpellier University Hospital, Montpellier, France
- ^{bq} SATT AxLR, Montpellier, France
- ^{br} Association Française des Ergothérapeutes, Boisseron, France
- ^{bs} Clinique du positionnement et de la mobilité, Nîmes University Hospital, Nîmes, France
- ^{bt} Union Nationale de Professions de Soins Médecins Libéraux, France
- ^{bu} Conseil régional de l'Ordre des Masseurs Kinésithérapeutes, Maison des Professions Libérales, Montpellier, France
- ^{bv} Inserm U1046, physiologie & médecine expérimentale, cœur et muscles, université Montpellier 1 & 2, Montpellier, France
- ^{bw} Inserm U1061 Neuropsychiatrie, Montpellier, France
- ^{bx} Faculty of Medicine, Imperial College London, London, UK
- ^{by} Association Asthme et Allergie, Paris, France
- ^{bz} Aniane, France

^{ca} Department of Geriatrics, Nîmes University Hospital, Nîmes, France

^{cb} LBN EA 4203, Montpellier, France

^{cc} University Hospital, Inserm U 1058, Montpellier, France

^{cd} IBM, Montpellier, France

^{ce} VEPHE, Section des Sciences de la Vie et de la Terre, Paris, France

^{cf} UMR S 710, université Montpellier 2, Montpellier, France

^{cg} Institut transdisciplinaire d'études du vieillissement, Montpellier, France

^{ch} Pharmacy School, University of Montpellier 1, Montpellier, France

^{ci} CEERDS UMR 5815, UFR Droit et Science Politique, Montpellier, France

^{cj} ASA - Advanced Solutions Accelerator, Clapiers, France

^{ck} Department of Ophthalmology, University Hospital, Montpellier, France

^{cl} Gerontology Center, Site Sainte Péline, Université de Versailles St-Quentin, Paris, France

^{cm} GÉrontopôle Autonomie Longévité, Nantes University Hospital, Nantes, France

^{cn} EIP on AHA, European Innovation Partnership on Active and Healthy Ageing, Reference Site, NHS Scotland, Glasgow, UK

^{co} LEGOS, Dauphine University, Paris, France

^{cp} Geneva, Switzerland

^{cq} Department of Prevention of Environmental Hazards and Allergology, Medical University of Warsaw, Poland

^{cr} European Union Geriatric Medicine Society, EUGMS, Europe

^{cs} GÉrontopôle de Toulouse, Toulouse, France

^{ct} Vice President for Research, University Montpellier 1, Montpellier, France

^{cu} SPLE des Thermes de Balaruc-les-Bains, Balaruc-les-Bains, France

ARTICLE INFO

Article history:

Received 28 July 2014

Accepted 31 July 2014

Available online 16 September 2014

Keywords:

Chronic diseases

Active and healthy ageing

MACVIA-LR

EIP on AHA

Falls

ABSTRACT

The Région Languedoc-Roussillon is the umbrella organisation for an interconnected and integrated project on AHA covering the 3 pillars of the European Innovation Partnership on Active and Healthy Ageing. All sub-activities (A1: electronic pharmaceutical file, A2: falls prevention initiative, A3: frailty, B3: chronic respiratory diseases, chronic diseases with comorbidities, oral health and hepatitis virus C chronic infection, C2 and D4 active and independent living and handicap) are included in MACVIA-LR that has a strong political commitment and includes all stakeholders (public, private, patients, policy makers). It is one of the Reference Sites of the European Innovation Partnership on Active and Healthy Ageing built around chronic diseases, ageing and handicap. The framework of MACVIA-LR has the vision that the prevention and management of CDs is essential for AHA promotion and for the reduction of handicap. The main objective of MACVIA-LR is to develop innovative solutions for a network of Living Labs in order to improve the care of patients affected by CDs in the Languedoc-Roussillon area and to disseminate the innovation.

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1. Introduction

The pilot European Innovation Partnership on Active and Healthy Ageing (EIP on AHA – <http://www.webgate.ec.europa.eu/eipaha/>) Strategic Implementation Plan has defined 3 priority areas of work and proposed a first set of 6 specific actions that were launched in 2012 (Table 1).

The Région Languedoc-Roussillon (LR) is the umbrella organization for an interconnected and integrated project on AHA, covering the 3 priority areas and Action Plans of the EIP on AHA [1]. The MACVIA-LR Reference Site of the EIP on AHA is built around CDs, ageing and handicap. It has a strong political commitment and includes all stakeholders (public, private, patients, policy makers).

MACVIA-LR has the vision that the prevention and management of chronic diseases (CDs) is essential for AHA promotion and for the reduction of handicap. The main objective of MACVIA-LR is to develop innovative solutions through a network of Living Labs in order to improve the care of patients affected by CDs in LR and to disseminate the innovation beyond.

MACVIA-LR follows the Living Labs definition of ENoLL (European Network of Living Labs) (<http://www.openlivinglabs.eu>): a real-life test and experimentation environment where users and producers co-create innovation, Public-Private-People Partnerships (PPPP) fostering user-driven open innovation. Research or clinical results can rapidly be deployed in real life for all users.

Two years after the launch of the call for EIP on AHA Reference Sites (February 28, 2012), a review of MACVIA-LR achievements is being provided to give an example of how the EIP on AHA was able to mobilize the stakeholders of a EU region in order to accomplish the goals of the partnership.

2. Governance

MACVIA-LR is under the leadership of the Fondation des Maladies Chroniques – Languedoc-Roussillon MACVIA. This abides by the rules of the Fondations Partenariales (Article L. 1719-13 du Code de l'éducation <http://www.universites-numeriques.fr>), which follow the Code de l'éducation (Law n° 87-571 of 23 July 1987, Decree n° 91-1005 of 30 September 1991 to apply Law n° 90-559 of 4 July 1990 and modify Law n° 87-571 of 23 July 1987). The founding members of the Fondation Partenariale are the University Montpellier 1, the University hospitals of Montpellier and Nîmes and the Région LR. Fondations Partenariales can participate in international cooperations. The MACVIA-LR governance includes founding members of the Fondation and of the MACVIA-LR Executive Committee (Table 2).

3. MACVIA Living Labs in line with the EIP on AHA Action Plans

All MACVIA-LR Living Labs are transversal and integrated across the EIP on AHA Actions Plans. However, they are more related to a specific Action Plan (Table 3).

3.1. A1: Dossier Pharmaceutique (DP®): F. Radier-Pontal (f.radier@resopharma.fr; f.radier@offisecure.com)

3.1.1. Objectives

The DP® is an electronic file under the leadership of the Conseil National de l'Ordre des Pharmaciens: law 2007-127 and article L. 161-36-4-2, Code Sécurité Sociale. Each Social Security member can use the DP®. All pharmacists in France are requested to use the DP® for each prescription, if the patient does not disagree. In

Table 1

Priority areas and action plans of the EIP on AHA.

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

Table 2

MACVIA-LR governance.

	Name	Organisation
Coordinator	Jean Bousquet	University Montpellier 1, University Hospital, Montpellier
Leadership	Christian Bourquin Philippe Augé Philippe Domy Jean-Olivier Arnaud Jacques Bringer	President, Région Languedoc-Roussillon President, University Montpellier 1 Director General, University Hospital, Montpellier (former) Director General, University Hospital, Nîmes Dean, Medical School, Montpellier-Nîmes
Executive Committee	Nicolas Best Rodolphe Bourret Thierry Camuzat Jean-Emmanuel de la Coussaye Olivier Jonquet Jacques Mercier Jean-Marie Robine	Deputy General Manager, University Hospital, Nîmes Deputy General Manager, University Hospital, Montpellier Deputy General Manager, Region Languedoc-Roussillon President, CME, University Hospital, Nîmes President, CME, University Hospital, Montpellier Vice president, University Montpellier 1 Inserm
Project manager	Anna Bedbrook	University Hospital, Montpellier

MACVIA-LR, the DP[®] will be used in older patients to achieve the goals of the EIP on AHA, focussing on:

- drug interactions and compliance to treatment in people ≥ 65 yrs;
- risk of falls (≥ 75 yrs) and falls prevention (A2), frailty (A3) and;
- chronic disease integrated care in the elderly (≥ 65 yrs) (B3).

3.1.2. Achievements

Among them, 98.5% of French private pharmacists (22,289 pharmacies) and 100 hospitals use the DP[®]. Coverage includes over 31 million people in France (all ages).

Table 3

Cross-cutting activities of MACVIA-LR Living Labs.

EIP on AHA Action Plan	A1	A2	A3	B3	C2	D4
Dossier pharmaceutique	+++	++	+	++		
Falls prevention	++	+++	+	+	+++	+++
Stroke	++	++	++	++	++	++
Frailty	+	+	+++	+	+	+
Chronic respiratory diseases	+		+	+++	+	+
Chronic diseases with comorbidities	++	+	+	+++	+	+
Oral health	+		+	+++	+	
Hepatitis	+		+	+++	+	
Handicap	+	+++	+++	+++	+	+++
Etape		+++	++	+	++	+++
I2ML		+++	++	+	+++	+++

3.2. A2: Living Lab integrated falls prevention initiative: H. Blain (h-blain@chu-montpellier.fr), D. Hève, A. Dupeyron

3.2.1. Objectives

Falls represent a major cause of burden, loss of autonomy and death in older adults [2–4]. The Living Lab was initiated in response to the EIP on AHA call. The Living Lab will:

- raise awareness;
- drive attitude change with respect to falls and falls prevention;
- propose ICPs for stroke and falls (with pharmacists) and;
- improve access to information on falls prevention in order to match the objectives of MACVIA-LR: to reduce hospitalisations for falls by 30% in 2020 in the Région LR (Table 4 and Fig. 1).

3.2.2. Achievements

Several initiatives are already active (Table 4). Links with research, teaching, patient's organisations and industrial partners are operative.

3.3. A3: Living Lab Frailty: M. Noguès (michel.nogues@carsat-lr.fr), C. Jeandel

3.3.1. Objectives

To develop preventive actions for the disabling cascade of frailty using ICPs and a teaching/coaching module for all action plans. The ICPs recommended by the Ministry of Health to persons over 65 years of age (PAERPA) propose to screen frailty by general practitioners in the Montpellier area and, if needed, to undergo a

Table 4

Activities of the MACVIA Falls Living Lab.

Activity	Location	Achievements	EIP on AHA Action Plan
Fall prevention clinic	CHRU Montpellier CHU Nîmes	Active	A1, A2, A3, B3, C2, D4
Regional Ageing Institute	CARSAT (Caisse d'assurance retraite et de la santé au travail)	In place September 2014	A2, A3, C2, D4
Low Vision Institute (ARAMAV)	CHU Nîmes	Active	A2, A3, B3, D4
Pôle Autonomie Santé (Étape)	Lattes (social care)	Active	A2, A3, C2, D4
I2ML	Nîmes	Active	A2, C2, D4
Care Pathway falls	MACVIA-LR	In process	A1, A2, A3, B3, C2, D4
Care pathway stroke	ARS (Agence Régionale de Santé)	Active	A2, D4

multidisciplinary evaluation at the hospital platform. A preventive intervention programme specifically tailored to the subjects' needs and resources is then proposed.

The teaching/coaching module (Trans Innov Longevité) is a trans-disciplinary, multi-sector, private-public partnership that trains and coaches on frailty, ageing and independent living. It is deployed in France, Canada and French-speaking African countries.

3.3.2. Achievements

Several initiatives are already active. They include:

- the hospital platform of “frail elderly”;
- the biochemical laboratory of the CHU Montpellier and;
- the regional professional union of general practitioners.

3.4. B3: Living Labs chronic diseases

Chronic diseases are diseases of long duration and slow progression. Major NCDs (cardiovascular diseases, cancer, CRDs, diabetes [5], rheumatologic diseases, oral and mental health [6]) represent the predominant health problem of the Century [5,7–9]. NCDs share common risk and socio-economic factors, and cluster in comorbidities [10]. They are intertwined with ageing.

3.4.1. Chronic respiratory and allergic diseases: J. Bousquet, P. Demoly (pascal.demoly@inserm.fr)

CRDs include a variety of diseases such as airway diseases (asthma, rhinitis and COPD), occupational lung diseases, sleep apnoea syndrome and genetic syndromes such as cystic fibrosis

[11,12]. CRDs represent a model of CDs due to their prevalence (over 1 billion people), burden (3 million annual deaths due to COPD), risk factor commonalities and comorbidities with other CDs.

3.4.1.1. AIRWAYS ICPs (Integrated care pathways for airway diseases).

3.4.1.1.1. Objectives. AIRWAYS ICPs was initiated by Area 5 of the Action Plan B3 of the EIP on AHA. It is a GARD (WHO Global Alliance against Chronic Respiratory Diseases) research demonstration project [11,13]. It includes 440 members and 67 countries. The objective is to launch a collaboration to develop multisectoral ICPs for CRDs in European countries and regions [14]. AIRWAYS ICPs is relevant to the EU Health Strategy, adding value to existing public health knowledge by:

- proposing a common framework of ICPs for CRDs which will facilitate comparability and trans-national initiatives;
- informing cost-effective policy development, in particular strengthening those on smoking and environment exposure;
- aiding risk stratification in CD patients with a common strategy;
- having a significant impact on the health of citizens in the short term (reduction of morbidity, improvement of education in children and of work in adults) and in the long-term (AHA);
- proposing a common simulation tool to assist physicians and;
- ultimately reducing the healthcare burden (emergency visits, avoidable hospitalisations, disability and costs) while improving quality of life. All stakeholders are involved (health and social carers, patients, policy makers).

3.4.1.1.2. Achievements. The concept has been finalised [14].

AIRWAYS ICPs was launched in Newcastle (UK) by the Région LR, North England and NHS England (February 17, 2014).

Implementation has begun.

3.4.1.2. MACVIA-ARIA. ARIA (Allergic Rhinitis and its Impact on Asthma), the most widely used guideline for allergic rhinitis and asthma comorbidity [15–17], has a study group of 350 members in 65 countries. It has been disseminated to specialists, general practitioners [18], pharmacists [19], other health care professionals and patients [18]. ARIA has been translated into over 50 languages and has been recommended by governmental health agencies (e.g. Brazil, Portugal, Singapore), the Finnish Allergy Plan [20] and scientific societies. The new initiative, MACVIA-ARIA, links ARIA activities with MACVIA to:

- optimize and strengthen the goals of each one and;
- meet the EIP on AHA objectives.

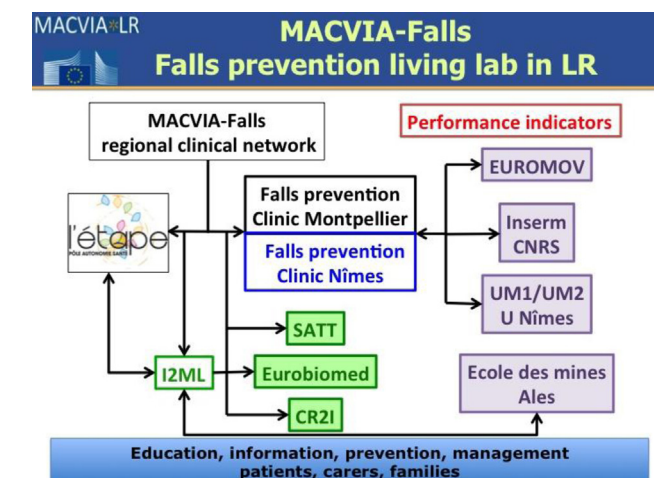


Fig. 1. The MACVIA Falls Living Lab. l'Étape: Lattes social and welfare community centre; I2ML: Mediterranean Institute of longevity business; SATT: Technology Transfer organisation; CR2I, EUROMOV: European nexus for research, technology, and innovation in the Movement Sciences; Inserm: Institut National de la Santé et de la Recherche Médicale; CNRS: Centre National de la Recherche Scientifique; UM: Montpellier University; U: University.

The leading priority for the 2011 Polish Presidency of the EU Council was to reduce health inequalities across European societies and to improve the prevention and control of CRDs in children [21,22]. MACVIA-ARIA will strengthen the conclusions of the

priority to reduce the burden of allergy and asthma across the life cycle for an improved AHA.

3.4.1.2.1. MACVIA-ARIA sentinel network (MASK). **3.4.1.2.1.1 Objectives.** MASK proposes to study the symptoms of patients suffering from allergic symptoms during the pollen season in order to make them sentinels for the onset and severity of the pollen season. Patients are geolocalised and will evaluate their symptoms by VAS, using a cell phone with a touch screen, or internet. This information will be coded and then sent to a central database and subsequently to all patients registered in the system. A Clinical Decision Support System (CDSS) [23,24] will immediately propose advice for (standardized) pharmacologic treatment. Patients with uncontrolled disease (SCUAD [25]) will be easily defined as those resistant to treatment despite optimal treatment. Moreover, conjunctival symptoms and asthma will be monitored by the system [26].

3.4.1.2.1.2 Achievements. ICT technology is available and a pilot study is planned.

3.4.1.2.2. MACVIA-ARIA in the pharmacy. **3.4.1.2.2.1 Objectives.** As trusted healthcare professionals in the community, pharmacists are well placed to identify the symptoms of allergic rhinitis and to recommend appropriate treatment [19]. A first paper was produced by ARIA in 2004. MACVIA-ARIA in the pharmacy will provide tools intended to help pharmacists give optimal advice to patients with allergic rhinitis, including diagnosis, OTC (over-the-counter) treatment and referral to a physician. ICPs will be adapted to each situation in the EU.

3.4.1.2.2.2 Achievements. ARIA in the pharmacy has been developed, published and largely disseminated [19]. MACVIA-ARIA in the pharmacy has now been initiated and will be used to design ICPs.

3.4.1.3. MACVIA respiratory and allergy network. The Global Allergy and Asthma European Network (GA2LEN), a Sixth EU Framework Programme for Research and Technological Development (FP6) Network of Excellence, was created in 2005 to ensure excellence in research, bringing together research and clinical institutions to combat fragmentation in the European research area and to tackle allergy in its globality [27]. The GA2LEN network has benefited greatly from the voluntary efforts of researchers who are strongly committed to this model of pan-European collaboration.

3.4.1.3.1. Objectives. The MACVIA respiratory and allergy network will include GA2LEN centres that have volunteered to set up activities to support the EIP on AHA, MASK and AIRWAYS ICPs networks.

3.4.2. Comorbid chronic diseases: A. Avignon (a-avignon@chu-montpellier.fr), M.C. Picot, D.J. Costa

3.4.2.1. Comorbidity clinic. **3.4.2.1.1. Objectives.** To develop, in a pilot study, multisectoral ICPs for CD based on a comorbidity clinic and its deployment in remote rural areas. To deploy the pilot study to the entire region by 2016–2020 in order to achieve the goals of MACVIA-LR: reduction of 20% of avoidable hospitalisations for CDs (Fig. 2).

An evidence-based list of criteria (questionnaires, exams, biology) on the major CD comorbidities is performed in a one-day clinic. It includes the criteria for:

- the screening of comorbidities of cardiovascular diseases (CVD), COPD or diabetes (D2M);
- the prediction of their exacerbations and;
- the overall appreciation of severity (Fig. 3) [10].

This common list is used for all patients referred to the clinic. Moreover, there are some age-specific criteria (falls A2 and frailty A3). ICT is implemented in the Montpellier hospital clinic (IP Soins)

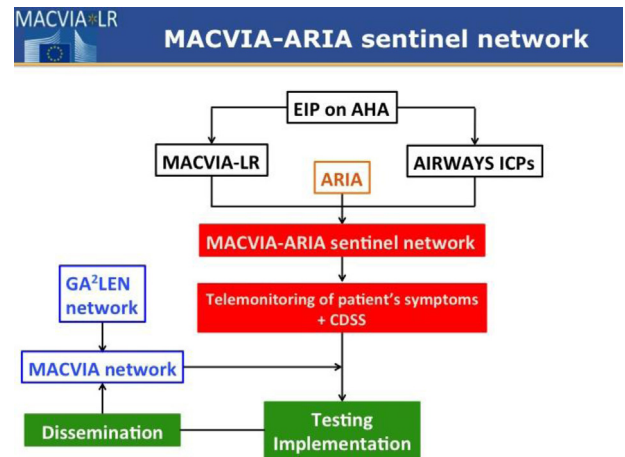


Fig. 2. MACVIA-ARIA sentinel network.

[28]. An interoperable CDSS is in process. ICPs will be available at the end of 2015. Research, coaching and teaching, as well as dissemination to the patients, are part of this activity.

A mobile clinic has been set up with interoperability with the comorbidity clinic. Its purpose is to screen comorbidities in remote areas of the rural counties of the Region. DeProPASS (Dépistage des Pathologies associées aux maladies chroniques) initiates pilot studies in the Maisons Médicales Pluridisciplinaires (article L. 6323-3 Code Santé Publique) of the LR Region. This mobile clinic will then be deployed to the remote areas of the Region. Remote monitoring is included.

3.4.2.1.2. Achievements. The comorbidity clinics are operative and have been tested in selected patients with a severe CD.

3.4.2.2. Avitam.

3.4.2.2.1. Objectives. The prevention and management of CDs require a holistic multidisciplinary approach. Primary care, the ICP cornerstone, needs to embed environmental, medical, psychosocial and economic components in order to promote AHA. Augmented reality is a live, copy, view of a real-world environment whose elements are augmented (or supplemented) by computer-generated sensory input such as sound, video, graphics or medical data (en.wikipedia.org/wiki/Augmented_reality). Using this concept, Avitam is an online software that embeds the results of a consultation with data implemented by the patient or with environmental elements during and outside the consultation. The

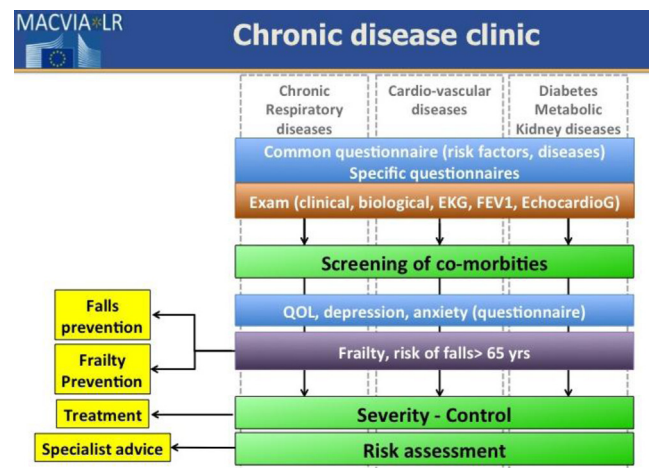


Fig. 3. MACVIA chronic disease clinic based on comorbidities.

aim of this software is to better manage CDs. With the help of advanced augmented reality technology (e.g. adding computer vision and object recognition), the information about the surrounding real world of the user becomes interactive and digitally manipulable. Augmented Reality can provide the physician with information that is otherwise hidden. Avitam assists the physician during consultation but is also a real time training tool and can be used for therapeutic education. Avitam enables the patient to become an actor of the management of his/her disease by interacting with his/her health status and environment. Avitam tools are being harmonised with those of the comorbidity clinic.

3.4.2.2.2. Achievements. The β -version of the Avitam software is ready (issued from an α -version tested in more than 500 patients).

3.4.3. E-dent: oral prevention and teledentistry: N. Giraudeau (nicolas.giraudeau@univ-montp1.fr)

General state of health is hugely influenced by the patient's oral health level [6]. There are barriers when it comes to delivering dental care for older people and/or underserved populations [29].

3.4.3.1. Objectives. Residents of medico-social establishments, with or without reduced mobility, have limited access to dental practitioners. Teledentistry does not exist within the European health system. A pilot study has been set up to provide teledentistry in medico-social establishments. An intra-oral camera using fluorescence light excitation can assess dental caries and gingival inflammation. This technology allows dental-teleconsultation. An ICP is currently being tested. In France, dental hygienists do not exist, so nurses have been trained. They record pictures and films of patients' oral cavity after tooth brushing. This information is then sent to a central server and saved. A dentist analyses the videos and a therapy plan is then proposed.

3.4.3.2. Achievements. The project is funded by the Agence Régionale de Santé (ARS). It is operative and is being tested in two centres.

3.4.4. Chronic hepatitis C multidisciplinary regional network: D. Larrey (dom-larrey@chu-montpellier.fr)

As survival rates and durations have improved, CDs also include communicable diseases such as HIV/AIDS and hepatitis. Hepatitis C Virus (HCV) chronic infection leads to chronic liver disease and extra-hepatic complications. The prognosis is worsened by alcohol abuse, obesity, insulin resistance, diabetes, drug addictions and/or co-infections with the hepatitis B virus and/or HIV. Since 2011, efficacy of the treatment of the HCV-1 genotype has improved with triple therapy [30]. However, these treatments are associated with serious side effects and risks of drug-drug interactions [31]. Poor adherence is one of the major factors of therapeutic failure [32], in particular in deprived populations. New anti direct antiviral agents are on their way and can improve the rate of viral eradication and tolerance. The detection of HCV is easily performed, even by general practitioners. Mobile Fibroscans may be used to evaluate liver injury severity [33]. The treatment of HVC is optimised by therapeutic education requiring a multidisciplinary team.

3.4.4.1. Objectives. The objective of the LR network on hepatitis (Réseau hépatites LR, <http://www.reseau-hepatites-languedoc-roussillon.org>) is to increase the accessibility and affordability of the early detection, management and follow-up of patients with HVC infection at the regional level, with a territorial network including remote rural areas [34]. All stakeholders are included in the network: health and social carers, patient's organisations, the ARS and the Départements. The ultimate goal is to reduce avoidable hospitalisations for chronic HCV disease and/or side effects from drugs.

3.4.4.2. Achievements. Patients are increasingly being included in programmes on therapeutic education to try to avoid hospitalisation as much as possible and to increase adherence to treatment and rate of recovery from HVC hepatitis.

3.5. C2 and D4: Active and independent living of older people

3.5.1. Pole Autonomie en Santé Lattes (PAS), Étape: E. Pastor (eric.pastor@wanadoo.fr)

3.5.1.1. Objectives. PAS proposes multisectoral innovative solutions to enable older and/or handicapped people to maintain independent living. 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) and citizens. 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 (<http://www.smart-cities.eu>).

3.5.1.2. Achievements. Approximately 1100 people (handicapped individuals, social carers, family members) visited ETAPE in 2013. Falls prevention represented a large percentage of these subjects.

3.5.2. I2ML: Institut Méditerranéen des métiers de longévité: C. Laurent (cyrilaurent@gmail.com)

3.5.2.1. Objectives. 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 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 I2ML 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 on regulations, law, ethics, health, home automation and nutrition.

3.5.2.2. Achievements. The foundation started its activity at the beginning of the year 2013. Its main technological support is a home automation Living Lab based on life quality and comfort for older people. The Living Lab was launched during a meeting held in its premises, February 27, 2014. The first measure and evaluation of technology linked with falls prevention with an industrial partner was started in June 2014.

3.6. Living Lab Handicap: I. Laffont, J.Y. Pélissier (jacques.pelissier@chu-nimes.fr)

More than 10,000 handicapped persons under 60 years of age are currently living in LR. More than 50% of these people suffer

from a neurological handicap. Our region provides numerous medico-social “places to live” for young adults (more than 200 accommodation establishments), especially in Lozère and Aude. Most of these places enable medical follow-up in a university hospital of the region.

The region offers a large number of Rehabilitation Centres, with a high level of scientific and research activities focusing on people with severe deficiencies leading to Activity Limitations, Participation Restrictions and Handicap. The Physical Medicine and Rehabilitation (PMR) teams of the Nîmes and Montpellier university hospitals are particularly active in care and research for neurological handicap (Stroke, Traumatic Brain Injury, Spinal Cord Injury, Locked-In Syndromes, neurodegenerative diseases...) and locomotor handicap (chronic back pain, degenerative joint diseases...). Both PMR departments are included in structured multidisciplinary networks. The Montpellier and Nîmes University hospitals both belong to the National Reference Centre on Neuro-muscular diseases for adults and children (“Centre de Référence Grand Sud”).

3.6.1. Objectives

This Living Lab Handicap focuses on:

- neuro-orthopaedic diseases and the prevention of falls and decrease in walking capacities: patients are offered a structured follow-up, including multidisciplinary approaches, motion analysis and individualised care;
- technical aid prescriptions and assessment relying on partnerships with industrials: CEDMH in the Nîmes CHU, EVADIMM in the Montpellier CHU, CENROB in the Propara Centre, “Positioning Clinics”, l’Etape...
- clinical and instrumental assessment of Bladder/sphincter, genito sexual and ano-rectal impairments;
- multidisciplinary cognitive impairment assessment.

3.6.2. Achievements

The Living Lab of Ambulatory Care Medicine focusing on Handicapped people is currently active in the PMR departments of both university hospitals, but also in other PMR centres strongly linked to the PMR university teams of Nîmes and Montpellier (spinal cord injury centre of Propara, children’s PMR centre of Palavas, TBI PMR centre of Bourguès, ADAGE Association, among others).

Collaborations with a large number of patients’ associations are very active and integrated in the Living Lab: AFM, AFTC, France AVC, ALIS, AFSEP, France Parkinson, GLIP...

Numerous national and international research programmes are currently being run on people with severe disabilities. There are active collaborations between clinicians and scientists in the field of movement (Euromov) or in the field of human sciences, pharmaceutical and other industrial companies.

4. Industrial partners

4.1. Eurobiomed

Eurobiomed is a non-for-profit organisation which has been accredited by the French government as a “competitive cluster”. There are 71 “competitive clusters” in France, and Eurobiomed is one of the eight Biotechnology – Pharma clusters. Eurobiomed federates healthcare stakeholders in both “Provence-Alpes-Côte d’Azur” and “Languedoc-Roussillon”. Dedicated real estate solutions and public sector support services are available for companies. Eurobiomed includes 400 companies with about 3000 industrial researchers ranging from biotech companies (such

as Innate Pharma, Ipsogen, Nicox, Medesis Pharma, Intrasure, Supersonic Imagine, Protomed, Trophos, Provence technologies, MedTech, SkuldTech, TxCell, Neureva, Pharmaxon, Neorphys, and many others), to large pharmaceutical (such as Sanofi-Aventis, Bio-Rad, Bausch et Lomb, Galderma, Idenix, Virbac, Beckman Coulter, CisBio International, Horiba Medical, Cezanne) and ICT (IBM) companies.

4.2. Silver economy

The members of the Silver Economy of the region are also associated with MACVIA-LR.

5. Website

The MACVIA-LR website is hosted by the Région Languedoc-Roussillon and is available in English and French (<http://macvia.crlanguedocroussillon.fr>).

6. Meetings organised by MACVIA-LR

6.1. European Parliament (Brussels, November 2012)

A debate was held (13 November 2012) at the EU Parliament on the Impact of early diagnosis and control of chronic respiratory diseases on Active and Healthy Ageing (AHA) [35]. The debate was organised under the auspices of the Cyprus Presidency of the EU (2012) and represented a follow-up of the priorities of the Polish Presidency of the EU (2011) [22,36].

6.2. Palais du Luxembourg (Paris, June 2013)

The EIP on AHA was presented in France at the Palais du Luxembourg, and the French reference sites and commitments for action were discussed [1] (Annex 16).

6.3. Early determinants of AHA (Montpellier, December 2–3, 2013)

Following the Priorities of the Polish and Cyprus Presidencies, a workshop was organised in Montpellier (DG Research & Development, DG Connect, DG Sanco, NIH) in order to better understand the early determinants of AHA and to propose policies. It followed a meeting organised at the NIH in September 2011 [37].

7. Scaling up and transferability

Members of the LR region are already using the nine-step scaling up strategy of ExpandNet/WHO (WHO library, 2010, ISBN 978 92 4 150031 9) for:

- dissemination and advocacy;
- organisational process;
- cost/resource mobilisation and;
- monitoring and evaluation.

ExpandNet/WHO is a global network of public health professionals and scientists seeking to advance the practice and science of scaling up successful health innovations tested in experimental, pilot and demonstration projects.

7.1. Replicability within France

The DP® is used by 98.5% of French private pharmacists. By April 2014, 31 million files (patients) had been documented. The Falls prevention initiative is led by H. Blain who is also leading the

Table 5

Members of AIRWAYS ICPs.

	Organisation	Member
EIP on AHA Commitment for action	Région LR (France) FILHA (Finland) GARD Turkey Norway Portugal Warsaw region (Poland) Eurobiomed (France)	J. Bousquet, P. Demoly T. Haahtela, T. Vasankari A. Yorgancioglu K.H. Carlsen, K.C. Lodrup Carlsen C. Barbara, E. Melo Gomes B. Samolinski C. Royère
EIP on AHA reference sites	Athens (Greece) Aura Andalucia (Spain) Basque Country (Spain) Campania (Italy) Coimbra (Portugal) Emilia Romania (Italy) North England (UK) Northern Ireland (UK) Polibienestar (Spain) Porto Age (Portugal) Scotland (UK) Southern Denmark (DK) Valencia (Spain)	T. Vontetsianos M. Bernabeu-Wittel E. de Manuel Keenoy G. Iaccarino A. Todo Bom A. Addis N. Wilson J. Farrell F. Rodenas J. Fonseca G. Crooks, D. Henderson L. Beck J. Redon
EU regions	Wallonie (Belgium)	V. Tellier
National coordinations	Czech Republic Lithuania Romania Serbia Slovenia	V. Kolek A. Valiulis F. Mihaltan, I. Agache B. Milenkovic M. Zidarn
European patients'organisations	EFA (European Federation of Allergy and Airways Diseases patient's association)	S. Palkonen
European scientific societies	EAACI (European Academy of Allergy and Clinical Immunology) ERS (European Respiratory Society) ERS (European Rhinology Society) EAP-UEMS (European Academy of Paediatrics) IPCRG (International Primary Care Respiratory Group)	N.G. Papadopoulos E. Bel W.J. Fokkens A. Valiulis N.H. Chavannes
WHO GARD		N. Khaltaev (Switzerland) A.A. Cruz (Brazil)
ARIA	Argentina Belgium Canada Cyprus France Germany Italy Japan UK	C.E. Baena-Cagnani C. Bachert H.J. Schunemann A. Neou I. Momas T. Zuberbier G.W. Canonica K. Ohta D. Price, D. Ryan

working group on falls of the Société Française de Gériatrie in order to deploy the LR experience to France.

7.2. Replicability in European regions and countries

This will take place in collaboration with:

- EUREGHA (European Regional and Local Health Authorities);
- the Assembly of European Regions (AER) of which the Region LR is a member and;
- the existing links of MACVIA-LR members with different regions and countries.

H Blain is one of the leaders of the Falls working group of EUGMS (European Union Geriatric Medicine Society).

AIRWAYS ICPs has already been approved by 6 Commitments for Action, 13 EIP on AHA Reference Sites, NHS England and Scotland, 5 national coordinations and governments (Table 5), the most important CRD patient's association in Europe (EFA) and major scientific societies (EAACI, ERS). It is a WHO GARD research demonstration project.

Disclosure of interest

Bousquet J.: Scientific and advisory boards Actelion, Almirall, Meda, Merck, MSD, Novartis, Sanofi-Aventis, Takeda, Teva, Uriach. Lectures during meetings – Almirall, AstraZeneca, Chiesi, GSK, Meda, Menarini, Merck, MSD, Novartis, Sanofi-Aventis, Takeda, Teva, Uriach.

Board of Directors – Stallergènes.

Camu W.: received honoraria for consulting activities and clinical research from Novartis, Sanofi, Actelion, Merck and Roche.

Costa P.: I am a consulting expert for the following pharmaceutical laboratories: Allergan, Boston Scientific, Endo-AMS, Lilly Icos, Menarini, Pfizer.

Gouzi F.: Grant support from an institution: APARD (Association Pour l'Assistance Respiratoire à Domicile): 25000 euros.

Pasdelou M.P.: Project leader – Sanofi R&D – Aging Unit.

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