

AIRWAYS-ICPs (European Innovation Partnership on Active and Healthy Ageing) from concept to implementation

Jean Bousquet^{1,2,3,4,5}, Cristina Barbara^{5,6}, Eric Bateman^{4,7}, Elisabeth Bel^{8,9}, Mike Bewick¹⁰, Niels H. Chavannes^{4,11,12}, Alvaro A. Cruz^{4,13}, Tari Haahtela^{5,14}, Peter W. Hellings^{15,16}, Nikolai Khaltaev⁴, Karin Lodrup Carlsen^{5,17,18}, Antonella Muraro^{16,19}, Carlos Robalo Cordeiro²⁰, Jose Rosado-Pinto^{4,21}, Boleslaw Samolinski^{5,22}, Timo Strandberg^{23,24,30}, Arunas Valiulis^{4,25,26}, Arzu Yorgancioglu^{4,5,27,28}, Torsten Zuberbier^{29,31} and the AIRWAYS-ICPs working group³²

¹University Hospital, Montpellier, France. ²MACVIA-LR, *Contre les Maladies Chroniques pour un Vieillissement Actif en Languedoc Roussillon*, European Innovation Partnership on Active and Healthy Ageing Reference Site, Montpellier, France. ³INSERM, VIMA: Ageing and chronic diseases Epidemiological and public health approaches, U1168, Paris, and UVSQ, UMR-S 1168, Université Versailles St-Quentin-en-Yvelines, Versailles, France. ⁴GARD, Global Alliance against Chronic Respiratory Diseases (GARD). ⁵EIP on AHA Commitment for Action. ⁶PNDR, Portuguese National Programme for Respiratory Diseases, Faculdade de Medicina de Lisboa, Lisbon, Portugal. ⁷Department of Medicine, University of Cape Town, Cape Town, South Africa. ⁸Department of Respiratory Medicine, Academic Medical Center (AMC), University of Amsterdam, Amsterdam, The Netherlands. ⁹ERS Past President, European Respiratory Society. ¹⁰Deputy National Medical Director, NHS England, UK. ¹¹Dept of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands. ¹²International Primary Care Respiratory Group. ¹³ProAR - Nucleo de Excelencia em Asma, Federal University of Bahia, Brasil and GARD Executive Committee. ¹⁴Skin and Allergy Hospital, Helsinki University Hospital, Helsinki, Finland. ¹⁵Laboratory of Clinical Immunology, Dept of Microbiology and Immunology, KU Leuven, Leuven, Belgium. ¹⁶EAAACI, European Academy of Allergy and Clinical Immunology. ¹⁷Dept of Paediatrics, Oslo University Hospital, Oslo, Norway. ¹⁸Faculty of Medicine, University of Oslo, Institute of Clinical Medicine, Oslo, Norway. ¹⁹Dept of Women and Child Health, Food Allergy Referral Centre Veneto Region, Padua General University Hospital, Padua, Italy. ²⁰Centre of Pneumology, Coimbra University Hospital, Coimbra, Portugal. ²¹Servico de Imunoalergologia, Hospital da Luz, Lisbon, Portugal. ²²Dept of Prevention of Environmental Hazards and Allergology, Medical University of Warsaw, Poland. ²³Dept of Paediatrics, Universities of Helsinki and Oulu, Finland. ²⁴European Union Geriatric Medicine Society, EUGMS. ²⁵Vilnius University Clinic of Children's Diseases, Vilnius, Lithuania. ²⁶European Academy of Pediatrics (EAP/UEMS-SP). ²⁷Dept of Pulmonology, Celal Bayar University, Manisa, Turkey. ²⁸Turkish Thoracic Society. ²⁹Allergy-Centre-Charité at the Department of Dermatology, Charité - Universitätsmedizin Berlin, Berlin, Germany. ³⁰Helsinki University Central Hospital, Helsinki, Finland. ³¹Secretary General of the Global Allergy and Asthma European Network (GA2LEN). ³²For members of the AIRWAYS-ICPs working group, see the Acknowledgements section.

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Chronic respiratory diseases (CRDs) are major non-communicable diseases (NCDs) [1, 2] that induce a significant burden. Asthma often occurs along the life cycle from early childhood, affecting 30 million children and adults under 45 years of age in Europe [3]. Chronic obstructive pulmonary disease (COPD) has an estimated annual death rate of over 3 million people globally [1, 2]. The annual direct and indirect costs in the 28 European Union (EU) countries due to COPD or asthma are estimated at 48 billion euros and 34 billion euros respectively [3]. Rhinitis occurs in over 100 million people in Europe, and indirect costs are enormous [4]. Asthma is a common risk factor for COPD [5, 6]. CRDs impact ageing and should be prevented, recognised and managed across the life cycle to promote active and healthy ageing (AHA). There is an urgent need to act globally.

European Innovation Partnerships (EIPs) aim to enhance EU competitiveness and tackle societal challenges through research and innovation. To tackle the potential of ageing in the EU, the European Commission, within its Innovation Union policy, launched the EIP on AHA (between the Directorate General for Health and Food Safety (DG Santé) and Directorate General for Communications Networks, Content and Technology (DG CONNECT)) [7]. The B3 Action Plan promotes integrated care models for chronic diseases, including the use of remote monitoring.

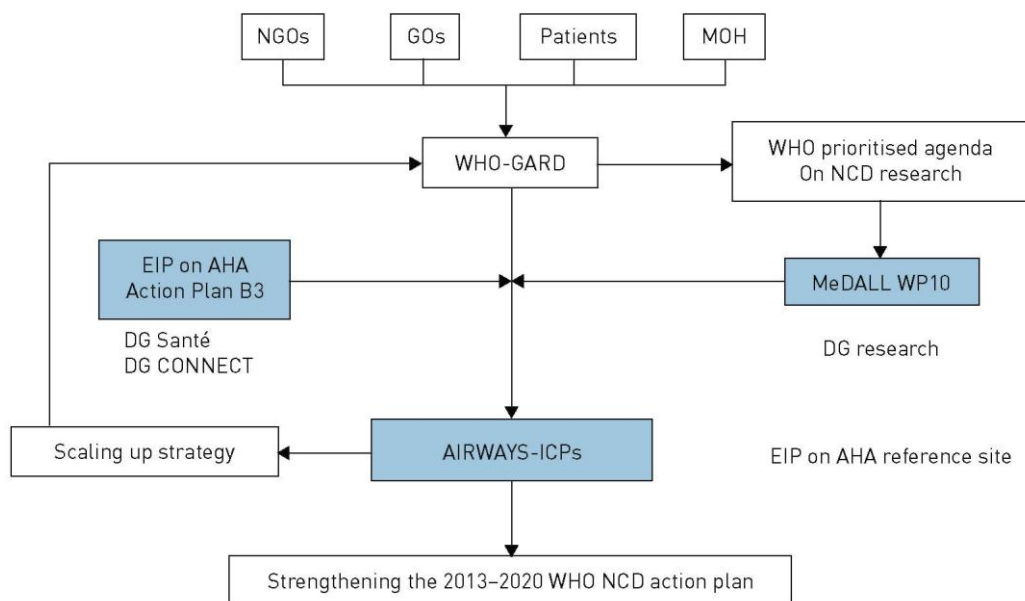
The initiative AIRWAYS-ICPs (integrated care pathways for airway diseases) [8] has been approved by the EIP on AHA as the model of chronic diseases of the B3 Action Plan. It is a Research Demonstration Project of the World Health Organization's Global Alliance against Chronic Respiratory Diseases (GARD) [1]. AIRWAYS-ICPs was initiated in 2013 by the WHO Collaborating Centre of Montpellier and the EIP on AHA Reference Site MACVIA-LR (*Contre les MALadies Chroniques Pour un Vieillissement Actif en Languedoc-Roussillon*, France) led by the Region Languedoc-Roussillon (France) [9].

The GARD action plan was the model of AIRWAYS-ICPs (figure 1).

Objectives

The aim of AIRWAYS-ICPs is to launch a collaboration to develop practical multisectoral care pathways (ICPs) to reduce the burden of chronic respiratory diseases, their mortality and multimorbidity. AIRWAYS-ICPs proposes a feasible, achievable and manageable project from science to guidelines and policies using existing networks and stakeholders committed to the Action Plan B3 of the EIP on AHA and GARD [1, 2]. It is implemented in European countries and regions, as part of the EIP on AHA, and is scaled up globally with GARD.

FIGURE 1 AIRWAYS-ICPs (integrated care pathways for airway diseases) interactions between the European Union and World Health Organization. NGO: nongovernmental organisation; GO: governmental organisation, MOH: Ministry of Health; GARD: Global Alliance against Chronic Respiratory Diseases; NCD: non-communicable disease; EIP: European Innovation Partnership; AHA: active and healthy ageing; DG Sante: Directorate General for Health and Food Safety; DG CONNECT: Directorate General for Communications Networks, Content and Technology; MeDALL WP10: Mechanisms of the Development of Allergy workpackage 10; DG Research: Directorate-General for Research and Innovation.



Stakeholders

AIRWAYS-ICPs activities are being implemented by a group of 450 members in 70 countries. Members also include those of previous initiatives such as ARIA (Allergic Rhinitis and its Impact on Asthma; initiated in collaboration with WHO) [10] and GARD [1, 2]. The majority of members have been working together since 1999. The GA²LEN (Global Allergy and Asthma European Network, Sixth Framework Programme) network of excellence centres of allergy and asthma [11] and members of EIP on AHA commitments for action are also involved. All stakeholders needed for the implementation of an action plan at the national and local levels actively participate. Scientific societies also participate in the project.

Implementation of the AIRWAYS-ICPs action plan

The action plan was devised by a group of 450 members and implemented in 2013 [8]. Activities are proposed in a logical framework from existing tools to novel information communication technology (ICT) tools and innovative health systems in order to provide an integrated solution for CRDs across the life cycle. The model of CRD can then be used for the health promotion of AHA and management of CRDs in older adults.

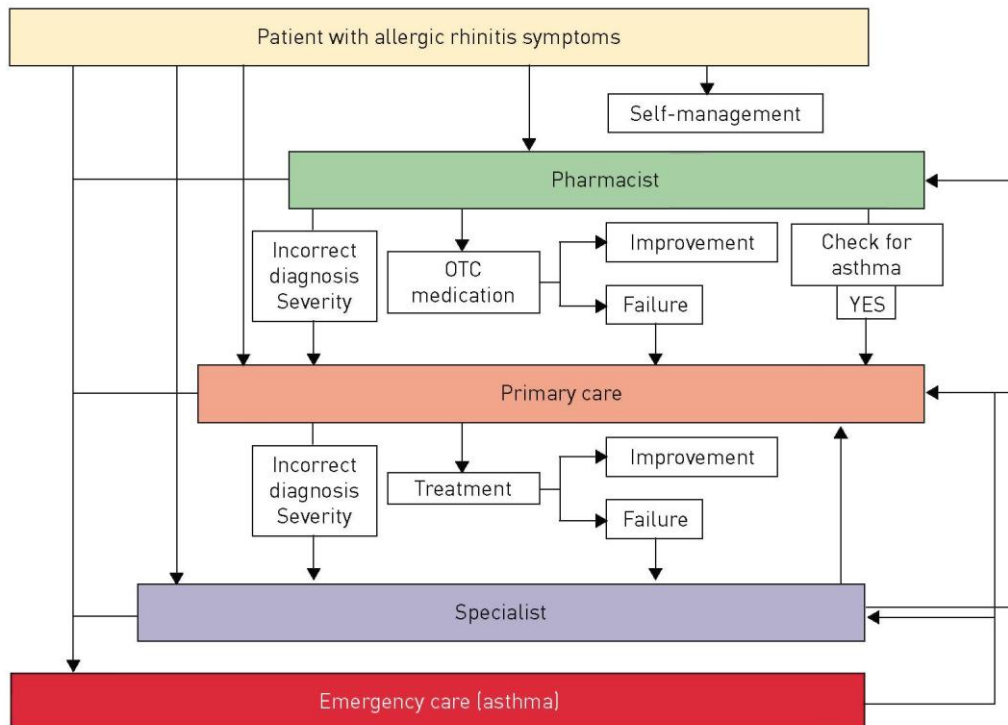
- Proposing a common framework of care pathways (ICPs) for CRDs to facilitate comparability and

trans-national initiatives targeted to all populations according to culture, health systems and income [12]: AIRWAYS-ICPs is participating in the development of a repository that is currently being developed by the EU and that will be available in December 2015. This repository will include good practices in CRDs such as National Institute for Health and Care Excellence (NICE; UK) guidance, national programmes for CRDs [13], asthma, COPD or allergy [14-16], guidelines for asthma, COPD or allergic rhinitis [10, 17-20], and ICPs.

- Developing a strategy for low-resource settings based on existing WHO initiatives such as the WHO Package of Essential Noncommunicable disease [21] and the essential list of drugs, as well as validated primary management strategies in low- and middle-income countries [22].
- Aiding risk stratification in chronic disease patients with a common strategy. AIRWAYS-ICPs has developed a simple stratification algorithm for asthma control and severity (following a 2009 WHO meeting) which can be extended to all chronic diseases unifying the classification of the diseases for clinical, research and public health use [23-25],
- Defining important questions on CRDs in older adults. There are no specific recommendations for CRDs in older adults and a research activity is ongoing to better understand asthma, COPD and their multimorbidities in old age.
- Developing multisectoral care pathways for CRDs and their multimorbidities across the life cycle, implementing emerging technologies for individualised and predictive medicine. Within the past four decades, an epidemic of allergic diseases and asthma has been observed globally in children and adults. The expected epidemic wave of asthma and rhinitis in older adults is an insufficiently recognised problem. In Europe, over 20% of adults suffer from allergic rhinitis and over 5% from asthma. These patients are now reaching the age of 65 years and a new health problem in old age people will be to understand, detect and manage these patients who also suffer from NCD multimorbidity and poly medication. There is an urgent need for a simple tool which would allow individualised and predictive medicine. AIRWAYS-ICPs is tackling this expected health problem, based on systems medical principles, in accordance with guidelines proposed by the European Commission (www.casym.eu) using the MACVIA-ARIA Sentinel Network (MASK). A common language is being used at the patient, pharmacist and physician levels using tablets and cell phones (figure 2).
- A first project directly linked with the activities of the WHO Collaborating Centre on rhinitis and asthma was initiated in 2013 and has been completed [10, 26-30]. MASK proposes the study of symptoms of patients suffering from allergic symptoms during the pollen season (rhinitis and asthma) in order to make them sentinels for the onset and severity of the pollen season. Patients are geolocalised and evaluate their symptoms by visual analogue scale using a cell phone with a touch screen or internet. A clinical decision support system will be finalised in December 2015. A care pathway from the patient to health care professionals has been built (figure 2) and a clinical decision support system will be available in December 2015.
- The system has been extended to persistent rhinitis and asthma, and a pulmonary function test using cell phones is currently being tested (available mid 2016). This may be of interest in all countries to screen for bronchial obstruction (asthma and COPD) by patients or at primary healthcare centres.
- The application is available in 15 languages from the App store (iOS) and Google play (Android). It is free for patients and, due to the simplicity of the tool, it can be used in developed and many developing countries (if a smart phone is available).
- Embedding the concept of frailty into CRDs and proposing an operational AHA questionnaire developed by the Reference Site Network of the EIP on AHA using WHO Disability Assessment Schedule 2.0 and quality-of-life questionnaires [31, 32]. Unrecognised CRDs can be detected in frail elderly patients [33]. Optimising treatment and integrated care services of frail COPD patients with multimorbidities and polypharmacy improves certain health outcomes [34],
- Scaling up strategies in Europe and beyond. The scaling up strategy has been clearly defined and approved by AIRWAYS-ICPs members. It follows the EIP-AHA recommendations on a five-step framework: 1) what to scale up: 1-1) databases of good practices; 1-2) assessment of viability of the

scaling up of good practices; 1-3) classification of good practices for local replication; and 2) how to scale up: 2-1) facilitating partnerships for scaling up; 2-2) implementation of key success factors and lessons learnt, including emerging technologies for individualised and predictive medicine. Scaling up will take place within and beyond Europe with GARD [35-40], • Strengthening the WHO NCD Action Plan. AIRWAYS-ICPs is in line with the WHO NCD Action Plan since it aims to reduce the preventable and avoidable burden of morbidity, mortality and disability by means of multisectoral collaboration and cooperation at national, regional and global levels.

FIGURE 2 Care pathways for rhinitis and asthma multimorbidity across the life cycle. OTC: over-the-counter. Reproduced from [26] with permission from the publisher.



Conclusions

AIRWAYS-ICPs is expected in the short term to reduce morbidity, and improve education and work and in the long term to promote AHA [41]. AIRWAYS-ICPs has strategic relevance to the EU Health Strategy and the WHO NCD Action Plan (2013-2020), adding value to existing public health knowledge.

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