



Respiratory
Effectiveness
Group

Respiratory Group Annual Report 2022

Pioneers in real-life respiratory
data and research

regresearchnetwork.org



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The Respiratory Effectiveness Group looks to a future with Real World Evidence

A global not-for profit, collaboration of clinicians, scientists and epidemiologists, working together to identify and fulfil the real-life research needs in respiratory medicine, advocating for change to drive improved patient management.

Our Vision

To transform respiratory patient care by maximising/exploiting/utilising real-life research & evidence

Our Mission

To integrate real-life evidence into clinical practice guidelines, policy and budgetary decision-making for the benefit of all stakeholders in respiratory medicine.

REG Strategy

REG will achieve its goal by:

- Nurturing an international network of primary and secondary care respiratory experts with an interest and expertise in real-life research
- Establishing alliances with partner organizations (e.g. APSR, ATS, EACCI, ENCePP, ERS, ESPACOMP, IPCRG, IPSE, ISPOR, patient organisations)
- Using RWE to address current key questions in respiratory medicine and impact on relevant international guidelines and health policies
- Acting as a think-tank to meet challenges in respiratory medicine in a pragmatic way
- Implementing a multi-faceted programme of activities aimed at improving the understanding of respiratory medicine with REG Collaborators, Partners and Supporters.

REG direction and philosophy

- REG leads the development and promotion of high-quality real-life collaborative research in respiratory medicine
- Setting quality standards
 - Real-life research studies, especially database studies, comparative effectiveness research and pragmatic clinical studies
 - Databases to be used in real-life observational research
 - Use of real-life research by developers of guidelines and decision-makers
 - Publication of real-life research protocols and results
 - Assessment of real-life research protocols and results
- Academic partner to the International Severe Asthma Registry (ISAR)
- Development and assessment of methods used in real-life research. e.g. bias reduction, patient selection, outcome measures
- Provision of advice and methodological help to researchers developing real-life research projects

Operational objectives

RESEARCH:

- To identify and prioritise the real-life research needs in respiratory medicine
- To stimulate and drive and/or facilitate the development of collaborative real-life research projects to address the identified needs

- To change the perception of real-life research

COLLABORATION:

- Grow an international collaboration of clinical and scientific expertise in real-life research, meeting and working together either wholly as REG, or in designated Working Groups
- Facilitate the development of networks of partners and supporters involved in real-life observational research, (academic researchers, industry, service providers, guideline developers, decision makers, regulatory agencies, editors, funding agencies, scientific societies, institutional bodies, patients' organisations) to improve levels of expertise and support research needs.
- Advocate change to the way journals, guideline committees and regulatory authorities appraise evidence to better integrate high-quality real-world data into recommendations, clinical decisions and policies.

QUALITY METHODOLOGY:

- Define and set quality standards for real-life research in respiratory medicine, through per protocol historic cohort analyses (database studies) and pragmatic clinical studies
- Develop, assess and standardise coding and methodology used in real-life research
- Develop rational prescribing pathways and clinical management & decision support tools
- Drive the publication and appreciation of real-life research validity through
 - Quality publications in high impact journals
 - Incorporation of real-life research into guideline development and health care resource utilisation decision makers
- Be the "Go to" organisation for advice, assistance and training on real-world research methodology.

REG's Structure

REG Board

BOARD COMPOSITION 2022 - 2024

President – Walter Canonica, *Professor Respiratory Medicine, Humanitas University*

Head Personalized Medicine Asthma & Allergy Clinic-Humanitas Research Hospital, Italy

Past President – Sinthia Bosnic-Anticevich, *Woolcock Institute of Medical Research, University of Sydney, Australia*

REG Company Directors (Board members)

Nikos Papadopoulos, *Professor of Allergy and Paediatric Allergy, National and Kapodistrian University of Athens, Athens, Greece*

Nicolas Roche, *Pneumologie et soins intensifs respiratoires, groupe hospitalier Cochin, Assistance publique-Hôpitaux de Paris, and Université Paris Descartes, France*

Antonio Anzueto, *Pulmonary/Critical Care, University of Texas Health Science Center at San Antonio, USA*

Dermot Ryan, *Strategic Clinical Director
Optimum Patient Care*

Alan Kaplan, *Department of Family and Community Medicine, University of Toronto, Toronto, Ontario, Canada*

Board members

Omar Usmani, *Reader in Respiratory Medicine and Consultant Physician at the National Heart and Lung Institute (NHLI), Imperial College London & Royal Brompton Hospital (RBH).*

Marc Miravittles - *Investigador Senior / Senior Researcher, Pneumologia, Hospital Universitari Vall d'Hebron (HUVH), Vall d'Hebron Institut de Recerca (VHIR), Barcelona, Spain*

Joan B Soriano - *Associate Professor of Medicine, Hospital Universitario de la Princesa, Universidad Autónoma de Madrid, Diego de León 62, Madrid, Spain*

Oversight Committee members - Nick May, Trevor Lambert, Keith Allan

The Board members has representation across the following geographic and care-domain areas, reflecting the high calibre of our collaborators:

- Asia-Pacific, Europe & North America
- Asthma, Allergy, COPD
- Primary, secondary & pharmacy care
- Adult and paediatric specialisms

Working Group Chairs

Adherence – Sinthia Bosnic-Anticevich, Australia

Allergy Working Group – Désirée Larenas-Linnemann, Mexico

Biomarkers and Severe Asthma – Leif Bjermer, Sweden

Child Health Working Group – Clare Murray, UK

COPD Working Group - Marc Miravittles, Spain

Cost Effectiveness Working Group – Brett McQueen, USA

Database and Coding Working Group – Jennifer Quint, UK

ILD/IPF – Pilar Rivera-Ortega, UK

Environment, Epidemiology and Airways Working Group – Omar Usmani, UK

Technologies Working Group – Ron Dandurand, Canada

The year in review

Staff

At the end of 2021, our Scientific Researcher Dr. Sarah Lucas decided to move on from REG. We were pleased welcome to Dr. Valeria Perugini to the REG team as Scientific Researcher to replace Sarah. We are very appreciative and acknowledge all the great work that Graham and Valeria have done in 2022. There have been a number of challenges through the year, but good progress has been made and they have been instrumental in supporting REG and the working groups to keep the momentum in the delivery of our projects. A big thank you and congratulations to them both for their hard work over this past year.

Governance

Our REG Board has met regularly online and in person during 2022 to address the organisational needs and are aware of the need to grow collaborations and supporters. The REG Board has continued to carry out its duties and support the goals of the organisation.

Scientific outputs

Scientific Outputs are primarily achieved through the REG Working Groups. The working groups continue to develop and execute projects in their respective scopes of operation. Many Working Groups held meetings during the REG summit and the ERS congress. For more detailed information on the Working Groups and their projects, please refer to the Working

Groups reports (Page 5). During this past year, only 2 pieces of original research were published which reflects the slowdown in activity due to the pandemic. At year end, there are five active studies and six projects in development.

Finance

In 2022 corporate support was renewed and new project funding secured. Careful planning and use of resources have enabled REG to deliver projects within budget and yielded a small operating gain (see Balance Sheet at end of report). We continue to closely monitor our spending with the goal to be as economical as possible. The valuable work of REG, both in terms of its research networks and its political influence depends on the continued collaboration with our valued supporters and we thank them for their on-going financial and expert contributions.

Meetings

The annual REG Summit returned as a successful live in-person event from 17 – 19 March 2022 in Barcelona. The REG Summit remains a key vehicle to showcase the many achievements of the organisation and our valued Collaborators, together with providing an interactive programme of presentations and debates covering the hot topics in respiratory medicine. The return to a live meeting was warmly welcomed by all participants. The next Summit is planned to take place from 16-18 March 2023 in Lisbon, March. A report on the Summit appears later in this report as well as our other congress activities in 2022.

Communications

The REG Newsletter provides REG collaborators and supporters with comprehensive updates of the work of the REG and is published twice a year. Regular updates are sent out by email and are included on the REG website www.regresearchnetwork.org

International Conference & Congress Activities

REG Summit 2022 LIVE, 17 – 19 March

The REG Summit 2022 was held as a live face-to-face event.

The REG Summit 2022, titled “Capitalizing on real-life research for best clinical guidance” lived up to expectations. As a live meeting, participants warmly welcomed the return to the face-to-face format and to reconnect with colleagues. Participants from 25 countries, and brought together researchers, students and industry collaborators who are working together and looking for opportunities to establish new collaborations. Noted international speakers created nine plenaries and three pro-con debates.

We held meetings of 10 Working Groups, which were well attended with reviews of current outputs and wonderful ideas for new initiatives. We had eight abstracts submitted/presented during our poster sessions.

A full report of the REG Summit 2022 LIVE and the abstracts can be found in the August 2022 REG Newsletter [REG-Newsletter_AUGUST_2022_FIN_hires.pdf \(regresearchnetwork.org\)](#)

ERS Congress, Barcelona, 4 - 6 September 2022

REG held a full timetable of Working Group meetings on Saturday 3rd September in conjunction with the ERS Congress in Barcelona. Sessions were held to progress work by most Working Groups as well very invigorating discussions on some of the broad issues that still require a clear methodology to investigate further.

Working Group update

Adherence Working Group

Adherence WG is chaired by Sinthia Bosnic-anticevich, also the PI of a scoping review project and actively supported by the group. The main objective of this project is to identify measures and recommendations used in respiratory guidelines for improving adherence, which has requested the group to initially catalogue outcomes published in 673 scientific papers targeted to analyse the more recent literature on adherence in asthma and COPD. The first-stage review has led the group to identify knowledge gaps such as insufficient validation strategies, summarise existing measures, highlight areas ripe for further quality improvement intervention, and finally assess the potential implications when future adherence strategies (e.g., digital technologies) become widely available. Findings have now been finalised and used for preparing two peer-reviewed publications that the group will present and refine at the next WG meeting in March 2023 before submission to journals.

Allergy Working Group

The working group has not had a chair since 2020. Following REG Summit 2022, Désirée Larenas-Linnemann became the chair of the working group. The group met at ERS in August 2022 and discussed a potential prospective study to identify the efficacy and effectiveness of AIT in moderate allergic asthma patients. A research proposal is currently being developed and will be discussed at the working group meeting at REG Summit in March. A study on the impact of allergic rhinitis on health-related quality of life in Australia has been completed and the manuscript is in preparation.

Child Health Working Group

The group is involved in two research projects that mainly address challenges in the treatment of asthma in children. These are:

1-Paediatric Asthma in Real Life (PeARL) project led by Nikos Papadopoulos on producing evidence-based recommendations regarding controversial aspects of paediatric asthma. The results from this study have been published in high-quality journals and used for finalising two additional papers now under revision.

2-Severe asthma in children is a new retrospective epidemiological database study to determine the (i) annual incidence of children with severe asthma in the UK primary care and (ii) prevalence of asthmatic children referred to a specialist and-or eligible for biological treatments applying different criteria to define severe asthma. Once the study setup ends, the group will work on data analysis planned throughout 2023.

Last September, Steve Turner decided stepping down as WG chair, and Clare Murray agreed to take up the leadership in the group.

Cost effectiveness Working Group

After Job Van Boven stepping down from working group chair last year, Brett McQueen was nominated and accepted the position of chair. A new research idea to model and estimate the cost-effectiveness of early vs late biologics in severe asthma patients was developed at ERS 2022. A proposal is being written and will be discussed and refined at REG Summit.

COPD Working Group

In 2022, the group continued to work well together and achieved a good deal under the supervision of the WG chair Marc Miravittles. In particular, the group actively worked on an observational multi-centre study, PIF in COPD, aimed to assess the prevalence of suboptimal peak inspiratory flow (PIF) in COPD patients and investigate the predictive value of PIF for

exacerbations and symptom burden. Last August, 18 study centres across seven countries recruited 416/400 patients and collected interesting results on baseline characteristics that were analysed for drafting a manuscript. Following-up visits and data collection are still in progress.

The group also (i) secured funding for a new COPD study, PRECISE-X, led by Bernardino Alcazar Navarrete and is on the development of a model for predicting the risk for the first COPD severe exacerbation, which study setup is underway, and (ii) developed a new idea finalised during the meeting at the REG-Summit 2022, to investigate the effects of triple pharmacological therapy on post-discharge outcomes in COPD patients. The idea translated into a research proposal is now with pharmaceutical companies seeking financial supports.

Database and Coding Working Group

Last year, the working group played a strategic role in defining and developing the execution of new research projects to support its goal of generating robust evidence and gaining hands-on experience using real-world data to support future trials and observational studies as well as policies locally and globally. In 2022, thus, the group explored strategic partnerships and facilitated European collaborations as those that have sustained the ERS-CRC 2022 grant. This project establishes the standardisation of respiratory definitions and outcomes using electronic health record data across European countries. Unfortunately, the project was unsuccessful, but its idea will be redefined by the group at the next WG meeting 2023 using concepts and knowledge gained during the TORPEDO phase 1 study, which will be integrated and explored. The group also thinks of developing distinct research project ideas using methods around creating and implementing measures and outcomes using CDM relevant to decode respiratory variables reported in different data systems and wrapping up these in the coming months.

Environment, Epidemiology and Airways Working Group (formerly Small Airways Working Group)

Following completion of phase 1 of the inhaler Choice & Environment (ICE) project a manuscript is in preparation. The steering committee decided not to go ahead with the phase 2 Delphi study due to time constraints and instead continue onto phase 3 of the project (an REG opinion piece), which will begin soon. The group will use the opportunity to meet at REG Summit to identify new potential research ideas.

ILD/IPF Working Group

The group developed a project, funded by Boehringer Ingelheim, to characterise ILD diagnosis in the post-COVID era. The survey was distributed electronically to HCPs who participate in the diagnosis and management of ILD patients from August 2022 to January 2023. There were 363 valid responses from unique centres across 64 countries. An abstract was accepted for a poster presentation to the 21st International Colloquium on Lung and Airway Fibrosis (ICLAF) in Reykjavik, Iceland. This was attended in October 2022. An abstract for the study was submitted to ERS Congress and a full report is being written. The group will use the meeting at REG Summit to generate new project ideas.

Severe Asthma and Biomarkers Working Group

Following discussions at the last WG meetings, REG-Summit 2022 and ERS 2022, the group used scientific research and evidence to constantly create and refine ideas (e.g., assessing biomarkers to predict the outcome of biological treatment) to promote external engagement and dissemination activities of the working group. The members aim to now facilitate the translation of their concepts into potential projects by encouraging knowledge-sharing and collaboration in the group.

Technology Working Group

Despite being funded from Novartis, the project identifying the real-world acceptability and usability of Enerzair® Breezhaler® + Propeller® sensor + app in uncontrolled asthma patients did not go ahead. Unfortunately, terms in the contract could not be agreed upon with Novartis and it was decided that the project could not move forward. The group met at ERS 2022. New technologies were discussed but new project ideas were not established. Potential new project ideas will be discussed at the working group meeting at REG Summit.

Active and planned projects

Project name	Description	Current phase
COPD		
Assessing the utility of Peak Inspiratory Flow as a predictor for COPD exacerbations (PIF in COPD)	A prospective trial to assess the role of PIF in predicting COPD exacerbations	Recruitment process completed (416/400 patients). Follow-up visits and data collection ongoing. Manuscript on the baseline characteristics in preparation
PREdiCTing the risk for first COPD Severe EXacerbation (PRECISE- X)	Development of a risk prediction model for first severe COPD exacerbation	Protocol submitted and approved by AstraZeneca. Contract signed. Study setup begun.
Child Health		
PeARL: Paediatric Asthma in Real Life	A standard setting exercise in paediatric asthma based on systematic review, expert consensus and ontological analysis of the unanswered questions in paediatric asthma	Manuscript under revision before submission
Determining the prevalence of severe asthma in children in UK primary care	Retrospective database study to assess the prevalence of severe asthma in children (5-16 Y) in UK primary care and the proportion of asthmatic children referred to a specialist and/or eligible for biologic treatments	Contract signed with Sanofi. Protocol reviewed and ethically approved by ADEPT. Dataset request submitted.
Environment, Epidemiology & Airways		
Expert opinion on the impact of inhaler choice on climate change and patient outcomes	Opinion piece on choice of inhaler delivery method (DPI, pMDI & SMI) and the impact of	Phase 1: HCP & Patient surveys completed. Manuscript contrasting in preparation. Phase 2: Delphi not going



	on climate change and patient outcomes	ahead. Phase 3: REG opinion piece about to begin.
Adherence		
Adherence monitoring and management	Literature reviews to assess how adherence is currently incorporated within guidelines and to determine how adherence can be monitored and managed with personalised medicine.	Manuscripts finalised and now under revision.
COPD		
Effects of triple pharmacological therapy on post-discharge outcomes in patients with COPD	A prospective study to investigate the frequency and risk factors for readmission and early exacerbations in patients discharged after an exacerbation of COPD and the impact of triple therapy in prolonging the time to the next admission	Proposal developed, and now seeking funding.
Database and Coding		
Standardisation of respiratory definitions and outcomes using real world data	The project will establish definitions and standards for use of European RWD sources while monitoring and improving their mapping to common data models	ERS-CRC2022 application finalised and submitted for funding.
Towards Optimum Reporting of Pulmonary Effectiveness Databases and Outcomes (TORPEDO)- PHASE 2	Survey to determine a list of current databases and which of the minimum variables from Phase 1 they contain, and a tool for the website to add selection of variables for prospective studies	Proposal drafted.
ILD		
Global Evaluation of the Interstitial Lung Disease (ILD) Diagnostic Pathway in the Post-COVID Era	Survey to identify the current structure of vMDTs / standardized diagnostic approach in the post-COVID era and challenges in post-COVID fibrosis and	Surveys closed in January 2023. Final report in development.



	COVID-associated complications	
Severe Asthma & Biomarkers		
Biomarkers to predict the outcome of biological treatment	Using data from various registries to look at blood eos, FeNO, and IgE changes in response to treatment with biologics and investigate the interactions between different biomarkers and comorbidities to predict the use of biologics.	Discussed at WG meeting.
Allergy		
The efficacy and effectiveness of AIT in moderate allergic asthma patients	Prospective observational study to demonstrate in patients with allergic asthma of moderate severity AIT is able to improve disease control and reduce the frequency of severe exacerbations.	Research proposal is currently in development.
Cost Effectiveness		
Cost-effectiveness of early biologics to treat severe asthma patients	Database/economic model to estimate the cost-effectiveness of early vs late biologics in severe asthma patients.	Research proposal currently in development and potential funding being sought.

Publications in 2022

In 2022, REG realised 2 publications of its research and activities. A further 5 manuscripts are in preparation. A full list of REG research publications is available on the REG website: <http://regresearchnetwork.org/reg-research-publications/>

Systemic corticosteroids in asthma: A call to action from World Allergy Organization and Respiratory Effectiveness Group

Eugene R. Bleeker, Mona Al-Ahmad, Leif Bjermer, Marco Caminati, Giorgio Walter Canonica, Alan Kaplan, Nikolaos G. Papadopoulos, Nicolas Roche, Dermot Ryan, Yuji Tohda, Anahí Yáñez, David Price

World Allergy Organization Journal Volume 15, Issue 12, 100726, December 01, 2022
<https://doi.org/10.1016/j.waojou.2022.100726>

Towards Optimum Reporting of Pulmonary Effectiveness Databases and Outcomes (TORPEDO): identifying a core dataset for asthma and COPD studies

Job FM van Boven, Sarah J Lucas, Gary Parker, Alan Kaplan, Antigona Trofor, Billie Bonevski, Bruce J Kirenga, Dermot Ryan, Emilio Pizzichini, Eric van Ganse, Erick Wan-Chun Huang, Evelyn Brakema, Gillian Gould, Janwillem Kocks, Jennifer Alison, Jennifer K Quint, Joan B Soriano, John Hurst, Kamran Siddiqi, Katherine Boydell, Marc Miravittles, Mario Alberto Flores-Valdez, Marise Kasteleyn, Mark FitzGerald, Melanie Boeckmann, Michael Chaiton, Miguel Roman Rodriguez, Muralidhar Kulkarni, Nicolas Roche, Niels Chavannes, Nikolaos G Papadopoulos, Panagiotis Behrakis, Sarah Dennis, Shalini Bassi, Siân Williams, Toby M Maher, Trishul Siddharthan, Veena Kamath, Katia MC Verhamme medrxiv.org October 22, 2021

<https://doi.org/10.1101/2021.10.14.21264843>



Financial summary

Profit and Loss

Respiratory Effectiveness Limited Trading as REG (Respiratory Effectiveness Group)

For the year ended 31 December 2022

	2022	2021
Turnover		
Restricted Income	180,528.37	327,697.21
Unrestricted Income	124,995.50	125,000.00
Total Turnover	305,523.87	452,697.21
Cost of Sales		
Research Costs	116,790.14	162,013.26
Summit Costs	25,914.73	12,776.82
Total Cost of Sales	142,704.87	174,790.08
Gross Profit	188,733.73	290,683.95
Administrative Costs		
Administrative Costs	139,558.92	146,694.90
Total Administrative Costs	139,558.92	146,694.90
Total Costs	282,263.79	321,484.98
Net Profit/(Loss)	23,260.08	131,212.23



Balance Sheet

Respiratory Effectiveness Limited Trading as REG (Respiratory Effectiveness Group)

As at 31 December 2022

	31 DEC 2022	31 DEC 2021
Assets		
Bank		
BARC EUR	162,855.21	142,094.61
BARC GBP	395,344.81	495,506.09
BARC USD	30,208.73	27,023.46
Total Bank	588,408.75	664,624.16
Current Assets		
Accounts Receivable	11,912.03	750.00
Total Current Assets	11,912.03	750.00
Total Assets	600,320.78	665,374.16
Fixed Assets		
Tangible Assets		
Office Equipment - accumulated depreciation	(585.33)	(585.33)
Office Equipment - at cost	586.33	586.33
Total Tangible Assets	1.00	1.00
Total Fixed Assets	1.00	1.00
Total Assets	600,321.78	665,375.16
Liabilities		
Creditors Liabilities		
Accounts Payable	7,913.96	4,464.69
Accruals	-	1,990.00
Deferred Revenue	442,633.20	505,670.22
Pension Fund	328.53	202.53
Provision for Corporation Tax	-	1,350.71
VAT Control	15,082.76	15,251.88
REG Barclaycard	138.25	265.90
Total Creditors Liabilities	466,096.70	529,195.93
Total Liabilities	466,096.70	529,195.93
Net Assets	134,225.08	136,179.23
Equity		
Accumulated Surplus	110,965.00	4,967.00
Current Year Earnings	23,260.08	131,212.23
Total Equity	134,225.08	136,179.23