

# International Severe Asthma Registry (ISAR): mission statement

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## Introduction

- Regional/national severe asthma registries provide valuable country-specific information.
- However, they may be limited by having insufficient statistical power to answer many research questions, lack intra-operability and have fundamental differences in data collected, making cross comparisons difficult.
- A worldwide registry, which brings all severe asthma data together in a cohesive way, under one umbrella, permitting seamless sharing of data may increase our ability to understand severe asthma.
- The aim of this poster was to:
  - Describe the first international adult severe asthma registry
  - Summarize what ISAR brings to the field of severe asthma

## Methods

### What is ISAR?

- The International Severe Asthma Registry (ISAR; <http://isaregistry.org/>) is the first global adult severe asthma registry; a multi-country, multi-center, observational real-life study.
- It is a joint initiative where national registries retain ownership of their own data, but open their borders and share data with ISAR for ethically-approved research purposes.
- The strengths of ISAR are summarized in **Figure 1**.
- This gives ISAR:
  - Sufficient **statistical power** to answer important research questions,
  - Sufficient **data standardization** to compare across countries/regions and
  - Structure and expertise** necessary to ensure its continuance, scientific integrity and the clinical applicability of its research.
- Data collection is supported by the use of a dedicated template, and also integrates with existing electronic data capture (EDC) systems.
- The target is to enroll 2,000 new patients into ISAR annually, and at least 13,150 patients worldwide by 2022.

### Patients included in ISAR

- Aged ≥ 18 years old
- Received treatment at Global Initiative for Asthma (GINA) Step 5, or had uncontrolled asthma (i.e. severe symptoms or frequent exacerbations) at GINA Step 4 (at inclusion),<sup>1</sup> and
- Provided consent for their prospective data to be included.

### Figure 1. the major principles underlying ISAR



## Methods

### Variable categories included in ISAR (Table 1)

- ISAR initially captures 95 core variables which have been agreed by Delphi consensus, and classified into 13 categories.<sup>2</sup>
- Additional variables have now been added.

Table 1. Categorization of ISAR core and additional variables

ISAR Core Variable Categories <sup>2</sup>		ISAR Additional Variable Categories
1. Asthma severity	8. Lung function	1. Safety (severe infection, malignancies, anaphylaxis)
2. Patient details	9. Allergen testing	
3. Occupation	10. Asthma control	2. Additional co-morbidities
4. Medical history	11. Asthma medication	
5. Co-morbidity	12. Adherence	3. Exacerbation details (e.g. date, rescue steroid & dose)
6. Blood/sputum	13. Management plan	4. Medication (e.g. OCS, ICS, ICS + LABA) dose & frequency & reason(s) for medication switching
7. Diagnostics		

### ISAR Governance & Steering Committee Members

- ISAR is governed by 4 governing bodies:
  - ISAR Steering Committee (49 experts from 29 countries; **Table 2**)
  - Respiratory Effectiveness Group (REG),
  - Anonymized Data Ethics & Protocol Transparency (ADEPT) Committee, which reviews the scientific quality and rigour of ISAR research protocols.
  - ISAR Operational Committee, involved in the day to day running of ISAR.

Table 2. ISAR Steering Committee Members

David Price (UK)	Enrico Heffler (IT)	Roland Buhl (DE)	Takashi Iwanaga (JN)
Rupert Jones (UK)	Peter Gibson (AU)	Chin Kook Rhee (KR)	Desiree Larenas Linnemann (MX)
Andrew Menzies-Gow (UK)	Mark Hew (AU)	Nikos Papadopoulos (GR)	Mona-Al-Ahmad (KW)
Liam Heaney (UK)	Matthew Peters (AU)	Richard Costello (IE)	Carlos Torres (CO)
Paul Pfeffer (UK)	Celeste Porsbjerg (DK)	Luis Perez-de Llano (ES)	Bassam Mahboub (UAE)
David Jackson (UK)	Sverre Lehmann (NO)	Borja G. Gosio (ES)	Majdy Idress (SA)
John Busby (UK)	Lauri Lehtimäki (FI)	Elisabeth Bel (NL)	Sundeep Salvi (IN)
Eileen Wang (USA)	Leif Bjerner (SE)	A. Maitland van der Zee (NL)	Diahn Wang Perng (TW)
Michael Weschler (USA)	Dora Ludviksdottir (IS)	George Christoff (BG)	Jorge Maspero (AR)
Mark Fitzgerald (CA)	Unnur Bjornsdottir (IS)	Ted Popov (BG)	Trung Tran (AZ)
Mohsen Sadatsafavi (CA)	Arnaud Bourdin (FR)	Alan Altraja (EE)	James Zangrilli (AZ)
G Walter Canonica (IT)	Camille Taille (FR)	Yuji Tohda (JN)	Marianna Alacqua (AZ)

### Contribute to ISAR

- Use the 'join the registry' and 'register your interest' options on the ISAR home page.
- Support is available to set up local registries via the provision of standardized variable list and/or a real-life, electronic data capturing system.
- Suggest research by clicking the 'submit a proposal or research request' option on the ISAR homepage.

## Results

- ISAR **already partners** with 19 national or regional registries in:
  - Europe (Bulgaria, Denmark, Greece, Ireland, Italy, Netherlands, Spain, UK),
  - The Americas (USA, Canada, Columbia, Mexico),
  - Asia Pacific (Japan, India, South Korea, Taiwan and the SAWD registry (comprising patient data from Australia, New Zealand, Singapore), and
  - The Middle East (Kuwait, UAE), with planned expansion to other regions of the world.
- Agreements are **in process** with 8 countries (Finland, Germany, Iceland, Norway, Sweden, Singapore, Argentina and Saudi Arabia)
- Countries **newly engaged** include Portugal, Estonia, France, Brazil and Russia, giving ISAR a truly global reach (**Figure 3**).
- ISAR currently comprises data from 7,825 severe asthma patients (individual data: n=6,431; aggregate data: n=1,294) and continues to grow.
  - The individual data is prospective for 1294 patients and retrospective for 5137 patients.
- The size of ISAR allows for:
  - The discernment of small clinically significant differences
  - The study rare outcomes
  - A better understanding of regional differences.
- A list of ISAR core projects and prioritized research initiatives are summarized in **Table 3**.

Figure 3. Global coverage of ISAR (current and planned)

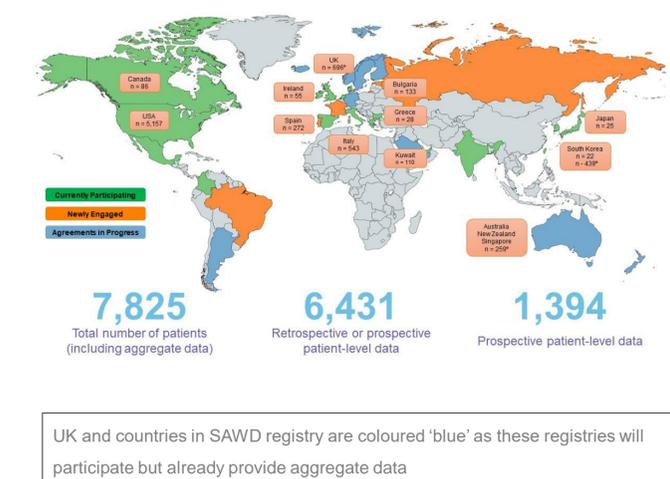


Table 3. ISAR core projects and prioritized research

YEAR / PRIORITY	DESCRIPTION
GLOBAL CORE PROJECTS	
	Demographic and clinical baseline characteristics of severe asthma patients worldwide
	The characterization and comparison of eosinophilic and non-eosinophilic phenotypes
	Comparative effectiveness across severe asthma biologic classes (Anti-IL-5 vs. Anti-IgE) in patients eligible for both modalities
PRIORITIZED RESEARCH	
	Hidden severe asthma patients in primary care
	The role of asthma exacerbations on lung function trajectory
	Biologics in severe asthma: Utilization patterns, causes for discontinuation and switching, and adverse outcomes
	Assessment of the overlap (reliability) of collected biomarkers
	Identification of predictors (i.e. biomarkers) of response to biologics
	Hidden chronic asthma within the COPD/ACOS population
	Age at onset of asthma in severe asthma patients
	Relationship between socio-economic status & asthma outcomes
	Describe the OCS landscape: annual consumption, prevalence, outcomes and side-effects of long-term OCS users
	Outcomes of switching between Anti-IL-5 receptor $\alpha$ chain monoclonal antibody and Anti-IL-5 monoclonal antibody therapy in severe asthma
	Characterization of health disparities (burden of illness or mortality) across countries
	Criteria for choosing and switching between similar biological treatment options in patients with atopic and non-atopic severe eosinophilic asthma

## Conclusions

- ISAR offers a unique opportunity to implement existing knowledge, generate new ideas and identify the unknown, so promoting new research.
- ISAR has the potential to become an important platform for the study and better understanding of severe asthma, supporting the appropriate use, and monitoring the impact, of novel asthma therapies.

## References

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