# Characterization of the epidemiology, treatment patterns and burden of Pulmonary Hypertension Group 1 and 3 in France, Germany and the UK: a real-word evidence study (PHILD_RWE_FR_DE_UK)

**First published:** 11/07/2023

**Last updated:** 23/04/2024

Study Finalised

## Administrative details

**EU PAS number**

EUPAS105806

**Study ID**

105807

**DARWIN EU® study**

No

**Study countries**

France

Germany

United Kingdom

**Study description**

Pulmonary hypertension (PH) is highly complex. There are five broad PH clinical categories recognized by the WHO: pulmonary arterial hypertension (PAH, Group 1), PH due to left heart disease (Group 2), PH with lung diseases and/or hypoxia (PH-LD, Group 3), Chronic Thromboembolic Pulmonary Hypertension (CTEPH, Group 4) or other disorders associated with PH (Group 5). This retrospective longitudinal cohort study uses claims data from France (PMSI, SNDS), Germany (SHI Funds), and electronic medical records (EMR) from the UK (CPRD/HES) from Jan-2015 to Dec-2021. The goal is to characterize the epidemiology, the patient profile, the treatment patterns, the resource utilization and the associated costs of PH-LD and the sub-group due to interstitial lung disease (PH-ILD, Group 3.2), and the treatment patterns of PAH patients over the 3-year inclusion period (Jan-2017 and Dec-2019) in the three countries. To identify PH-LD and PAH patients previously published decision trees will be applied to the data sources based on input of clinicians actively treating these patients. In the absence of ICD-10 codes, PH-LD and the sub-group PH-ILD patients will be identified based on the combination of PH-recorded diagnosis with LD/ILD records in the prior 24 months and up to 60 days after the first diagnosis. PAH patients will be identified based on a combination of PH diagnosis, visit to a PH center (if available), Right Heart Catheterization (RHC), and PAH-specific drugs. An estimation of prevalence and incidence will be reported per cohort and country. Patient baseline characteristics and comorbidities will be described, resource use measured, and real-world outcomes, including mortality, presented. Lastly, the treatment patterns will be described for the three cohorts. This pan-European RWE study will provide valuable insights into the epidemiology, management, and real-world outcomes of PAH, PH-LD, and PH-ILD. Limitations associated with claims and EMR data sources apply.

**Study status**

Finalised

# Research institutions and networks

## Institutions

Alira Health AG Swiss, Alira Health SAS France, Alira Health SLU Spain

# Contact details

**Study institution contact**

Gabriela Bacchini Jeanneret GBacchini@ferrer.com

**Study contact**

GBacchini@ferrer.com

**Primary lead investigator**

Gabriela Bacchini Jeanneret

**Primary lead investigator**

# Study timelines

**Date when funding contract was signed**

Planned: 01/07/2022

Actual: 19/07/2022

**Study start date**
Planned: 13/07/2022

Actual: 25/11/2022

---

**Date of final study report**
Planned: 07/07/2023

Actual: 07/07/2023

## Sources of funding

- Pharmaceutical company and other private sector

## More details on funding

Ferrer

## Study protocol

20230517_Alira Health_Ferrer RWE Study Umbrella protocol_final_v2.0.pdf (2.03 MB)

## Regulatory

**Was the study required by a regulatory body?**

No

---

**Is the study required by a Risk Management Plan (RMP)?**

Not applicable

# Methodological aspects

## Study type

## Study type list

**Study topic:**

Disease /health condition

---

**Study type:**

Non-interventional study

---

**Scope of the study:**

Disease epidemiology

Drug utilisation

Healthcare resource utilisation

**Data collection methods:**

Secondary use of data

---

**Main study objective:**

To estimate prevalence and incidence of PH with lung diseases and/or hypoxia (PH-LD) and PH with interstitial lung disease (PH-ILD) in Germany, France, and the UK. To characterize baseline characteristics, comorbidities, resource use, and real-world outcomes of PH-LD and PH-ILD patients. To describe treatment patterns of three cohorts: pulmonary arterial hypertension (PAH), PH-LD, and PH-ILD.

# Study Design

**Non-interventional study design**

Cohort

Other

---

**Non-interventional study design, other**

Retrospective longitudinal study

# Study drug and medical condition

**Medical condition to be studied**

Pulmonary hypertension

Chronic respiratory disease

Interstitial lung disease

Pulmonary arterial hypertension

# Population studied

**Short description of the study population**

The study focused on two main cohorts and a subgroup: group 1 patients with pulmonary arterial hypertension (PAH) cohort, group 3 patients with pulmonary arterial hypertension (PAH) and/or hypoxia cohort, and subgroup 3.2 of patients with pulmonary hypertension associated with interstitial lung disease.

---

**Age groups**

- Adults (18 to < 46 years)
- Adults (46 to < 65 years)
- Adults (65 to < 75 years)
- Adults (75 to < 85 years)
- Adults (85 years and over)

---

**Special population of interest**

Other

---

**Special population of interest, other**

Patients with hypertension and lung disease

---

**Estimated number of subjects**

15.000

# Study design details

**Outcomes**

1. Estimation of the prevalence and incidence of PH-LD and PH-ILD in Germany, France, and the UK. - 2. The characterization of the treatment patterns of PAH, PH-LD, and the sub-group PH-ILD patients, 1. Estimation of burden of disease of PH-LD and PH-ILD patients in terms of resource use and costs, evaluating hospital care (inpatient and outpatient), expenditure on tests, procedures, diagnostics, and medications. - 2. Characterization of the patient profile, real-world outcomes in terms of demographic and clinical characteristics, comorbidity burden, survival rate, yearly hospitalization rate

---

**Data analysis plan**

The queries, management and statistical analysis of the data used will be developed by Alira Health using R and RStudio software or Python for France and UK databases, whereas for the German claims data, SAS and Excel will be used. Descriptive statistics will be presented for all evaluation criteria for each population, as follows: - Quantitative variables a. Quantitative variables will be described with standard statistics including, the mean, standard deviation (SD), median, quartiles, and minimum and maximum. The number of patients with missing data will be reported for each variable and will be described accordingly. Quantitative variables may be categorized into quantiles as required. - Categorical variables - Counts and percentages will be computed for categorical variables. - If relevant, all statistical tests will be two-sided and considered significant at the 5% level. A more detailed Statistical Analysis Plan of the study will be developed.

# Data management

# ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

# Data sources

**Data source(s)**

Clinical Practice Research Datalink

Hospital Episode Statistics

**Data source(s), other**

SNDS France, PMSI France, SHI Germany

**Data sources (types)**

Administrative healthcare records (e.g., claims)

Electronic healthcare records (EHR)

# Use of a Common Data Model (CDM)

**CDM mapping**

No

# Data quality specifications

**Check conformance**

Unknown

**Check completeness**

Unknown

**Check stability**

Unknown

**Check logical consistency**

Unknown

## Data characterisation

**Data characterisation conducted**

No