and number of ppFVC tests with consistent ppFVC results across cohorts. This indicates that NLP-based extraction of ppFVC from unstructured EHR notes may be a viable approach to increase sample size and clinical data capture, thereby improving statistical power for downstream analyses.

RWD43
COMPREHENSIVE LANDSCAPE ASSESSMENT OF REAL-WORLD DATABASES FOR HEOR STUDIES IN THE ASIA-PACIFIC REGION: A GROWING OPPORTUNITY

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Objectives: The Asia-Pacific(APAC) region is an emerging hub for Real-World-Evidence(RWE), leveraging diverse, often underrepresented populations in clinical trials, with expanding healthcare systems, and increasing access to claims, EHRs, registries, and biobanks. Emerging markets are started realizing the value of investing in robust RWD to inform health policy, research, and innovation. However, identifying fit-for-purpose and accessible databases remains a significant challenge across APAC. This study seeks to evaluate the spectrum of RWD sources available in APAC, aiming to identify databases striking a balance between accessibility and content richness. ***Methods:*** A narrative review of RWE publications from Jan2021-May2025 was conducted and classified the databases by type, data attributes, and the nature of the evidence presented. A quadrant analysis was performed to evaluate databases based on content richness and ease of access, with the top-right quadrant denoting those with high accessibility, and the bottom-left identifying databases with robust content but restricted availability. ***Results:*** The APAC region hosts several interesting databases to support HEOR. South Korea's NHID and HIRA, and Taiwan's NHIRD, offer population-wide data on healthcare use, diagnoses, and mortality. Japan contributes through MDV, JMDC, DeSC, and Biobank Japan, which provide extensive claims and clinical information. Singapore's NEHR and NRDO support research and policy, but access is limited for non-academics. Malaysia's NHMS, MyHDW, and disease registries and Thailand's NHSO and MOPH datasets are instrumental in regulatory decision-making and outcomes-research. China's UEBMI and CHIRA enable analyses of cost sensitivity and real-world evidence generation. India's AB-PMJAY claims data and structured EHRs from major hospitals are increasingly used in HEOR. Despite decisive, the region still grapples with the common issues of fragmentation, accessibility, and privacy constraints. ***Conclusions:*** APAC's diverse and growing RWD present unique opportunities to generate focused insights on local populations. With improving data governance and access, the region is set to play a key role for global research.

RWD44
COPD-ASTHMA OVERLAP IN BRAZILIAN PRIVATE HEALTHCARE: CLINICAL PROFILES AND OUTCOMES FROM A REAL-WORLD ANALYSIS

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Objectives: Type 2 inflammation underlies the pathophysiological mechanisms of various disorders characterized by distinct clinical manifestations across multiple organ systems, including chronic obstructive pulmonary disease (COPD) and asthma. This study aimed to examine the clinical characteristics, comorbidities, and healthcare utilization patterns of patients diagnosed with COPD and co-morbid asthma within the Brazilian private healthcare system. ***Methods:*** A retrospective cohort study was conducted using the TriNetX real-world database. The study population comprised Brazilian adults (≥40 years) primarily diagnosed with COPD (ICD-10 codes J41-J44), presenting with eosinophil counts ≥300/μL and co-morbid asthma (ICD-10 code J45). Patients with secondary ICD-10 codes known to increase eosinophil levels were excluded. Patient demographics, comorbidities, and healthcare utilization metrics, including outpatient visits, emergency room (ER) visits, and hospitalization, were analyzed (time horizon for 95% of data: Jan 2013 to Jun 2025). ***Results:*** The cohort analyzed included 350 individuals, averaging 3.15 ± 4.24 eosinophils/100 leukocytes in blood, with an average age of 68.5 ± 14.5 and 34% male. Most common comorbidities included circulatory system diseases (51%), viral or bacterial infections (40%), diseases of the musculoskeletal system (37%), influenza and pneumonia (34%), and genitourinary system disorders (34%). During the first year following the index date, 74% of these patients went through ambulatory visits, with a mean of 9.91 visits (SD ± 18.86); 43% ER visits with a mean of 3.11 visits (SD ± 2.93) and 37% hospitalization with a mean of 1.93 visits (SD ± 1.47). ***Conclusions:*** Patients with COPD with high blood eosinophil count (≥300/μL) and concurrent asthma demonstrate significant healthcare resource utilization and a high burden of comorbidities, highlighting substantial unmet medical needs. These findings emphasize the importance of targeted type 2 inflammation therapies to optimize healthcare resource allocation and enhance clinical outcomes in this complex patient population.

RWD47
DARAH PROJECT: DEPLOYING A DATASHIELD FEDERATED NETWORK IN REAL-WORLD HEALTHCARE ENVIRONMENTS

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Objectives: Federated analytics allows scientists to perform statistical analysis without direct access to the raw data from each site. Despite some pilotes and proof of concepts, federated analytics is still not widely used on real-world data, and to our knowledge, no real-world study has yet combined it with other privacy-enhancing techniques such as differential privacy. The first objective of this study was to deploy a federated network of hospitals in a real-world setting. The oncology study used for this deployment compared the medical healthcare management of patients with metastatic non-small cell lung cancer before and during/after the 1st wave of COVID-19. The second goal was to test differential privacy in this real-world scenario to assess its practicality and utility as a privacy enhancing technology. ***Methods:*** A federated architecture platform was set up in 3 french hospitals. After harmonization of the data in each center, statistical analyses were performed using DataSHIELD, a federated analysis R library and a new open source differential privacy DataSHIELD package was implemented: dsPrivacy.149 patients were enrolled and 7 variables was collected from chemotherapy management software CHIMIO. ***Results:*** We have shown that DataSHIELD is a practical tool to efficiently conduct our study across all 3 centers without exposing data on a central node, once sufficient setup has been made to configure a secure network between hospitals. All planned aggregated results were successfully generated. We also observed that differential privacy can be implemented in practice with promising trade-offs between privacy and accuracy, and we built a library that will prove useful for future work. ***Conclusions:*** DARAH project illustrates that federated analytics is operative to conduct real world data projects while improving data privacy, by keeping patient data stored in the hospitals and leveraging their already existing data architecture. It highlights some key challenges as specific data preparation and data structuration.

RWD48
DARWIN EU® CHARACTERIZING CLINICALLY RECOGNIZED HYPERTROPHIC CARDIOMYOPATHY IN SIX EUROPEAN COUNTRIES: A DESCRIPTIVE ANALYSIS USING REAL-WORLD DATA

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Objectives: This study aimed to describe clinically recognised hypertrophic cardiomyopathy (HCM) and obstructive HCM (oHCM) in terms of prevalence, demographics, and clinical characteristics across multiple European countries. ***Methods:*** We conducted a retrospective cohort study using routinely collected healthcare data sources from six European countries: CPRD-GOLD (UK), DK-DHR (Denmark), InGef RDB (Germany), NAJS (Croatia), NLHR (Norway), and SIDIAP (Spain). Data were mapped to the OMOP Common Data Model and integrated into the DARWIN EU® network, funded by the European Medicines Agency. Individuals ≥18 years with a first recorded diagnosis of HCM or oHCM between 2010 and 2023 were included. We estimated annual period prevalence and described the frequency of predefined comorbidities, diagnostic tests, and treatments recorded before, at, and after diagnosis, stratified by age and sex. The median time from the first record of each variable to HCM diagnosis was also estimated. ***Results:*** Over 40,200 individuals with HCM were identified, with oHCM cases ranging from 21% (SIDIAP) to 60% (CPRD-GOLD). Women were consistently older than men at diagnosis, with median ages of 67-78 years versus 57-68 years. HCM prevalence increased over time across all databases, reaching 0.04% (CPRD-GOLD) to 0.24% (SIDIAP) in 2023. Prevalence of oHCM followed a similar but lower trend, ranging from 0.03% (CPRD-GOLD) to 0.07% (NLHR). HCM prevalence was higher in men, though sex differences were less marked in those aged ≥80. The most common comorbidities included essential hypertension, arrhythmia, ischaemic heart disease, and heart failure, with valvular heart disease more frequent in oHCM. Beta-blockers, diuretics, and

angiotensin-converting enzyme inhibitors were the most frequently prescribed treatments. Most comorbidities and treatments were firstly recorded over a year before HCM diagnosis. ***Conclusions:*** HCM prevalence varied across data sources but consistently increased over time. The frequent recording of cardiac comorbidities and treatments before diagnosis highlights the need for earlier disease recognition.

RWD49
DATA LINKAGE IN PRACTICE: A LIVING SYSTEMATIC REVIEW OF CLINICAL TRIALS IN THE UNITED STATES (US) UTILIZING LINKAGE TO REAL-WORLD DATA

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Objectives: Data linkage and tokenization are increasingly being adopted to address current limitations in clinical trials; however, research on topics and implementation of linkage/tokenization in practice is limited. The objectives of this systematic review were to describe and quantify examples of published clinical trials in the US that used data linkage and evaluate the analytical goals and uses of linked data. ***Methods:*** Relevant articles were identified through PubMed and ClinicalTrials.gov searches implemented on an artificial intelligence-assisted systematic literature review platform (AutoLit, Nested Knowledge), for publications between 2014-2025. Articles were included if they reported a pharmacological intervention and a US-based study population. Study background, objective, patient disease state, type of linked data, linked data elements, and linkage methods were extracted from each study. ***Results:*** Out of 902 abstracts screened, 31 publications reporting trials with linkage were included in this review. The studies were sponsored by industry(8), academic(6) and government institutions(17). There were 11 interventional trials, 1 phase II, 14 phase III, and 5 phase IV trials. Trial data were linked with real-world datasets, including claims data(74.2%), registries(16%), and electronic health records (10%). The disease states were: Cardiovascular Risk(10), Cancer/Tumors(5), Aortic Stenosis(2), Kidney Disease(3), Women's Health(3), and Other(7)[ER1]. Most studies used deterministic linkage(61.3%), followed by methods which were hybrid or unclear (25.8%), and probabilistic linkage(12.9%). Of the 28 studies that reported the percentage of the population that was successfully linked, the range was 11.6%-100% and average of 64.7%. The key objectives for using linkage were efficacy(9), cost(5), methodology/validation(7), safety/adverse events(3), feasibility(3), survival(3), and medical history(1). ***Conclusions:*** This review demonstrates the increased use of data linkage by US-based government, industry and academic centers in clinical trials for drugs for a broad range of therapeutic areas and objectives. These findings show a burgeoning role for linkage in expanding outcome collection and analysis across diverse disease areas.

RWD50
DATA LINKAGE TO SUPPORT REAL-WORLD EVDENCE IN RARE DISEASE

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Objectives: There is limited real-world evidence (RWE) on healthcare resource utilisation (HCRU) in rare diseases, especially when stratified by disease severity. This creates challenges for regulatory submissions and early access to treatment. We were commissioned by a global pharmaceutical company to estimate the monthly cost of secondary care HCRU for a rare, progressive disease, stratified by WHO Functional Class (FC), risk status, and therapy regimen. ***Methods:*** We conducted a retrospective, non-interventional cohort study using pseudonymised patient-level data from a UK National Cohort Registry, linked to NHS Hospital Episode Statistics (HES). After obtaining Research Ethics Committee and Health Research Authority approvals, we developed a robust linkage methodology to join clinical registry data with inpatient, outpatient, and emergency care records. We analysed three years pre- and five years post-diagnosis, calculating average monthly resource use and costs per patient using the NHS National Tariff Payment System. Metrics were stratified by disease severity and therapy regimen. A Data Access Request Service (DARS) application was also submitted to expand the cohort for future analysis. ***Results:*** We estimated average monthly HCRU costs across different levels of disease severity and treatment intensity. Distinct patterns of healthcare utilisation were observed before and after diagnosis. Interim findings supported the client's regulatory submission to NICE for a new therapy. The client reported that we delivered the analysis 60% faster than their typical timelines (10 months vs. 24 months). ***Conclusions:*** This study demonstrates how linked national datasets can be used to generate timely, high-quality RWE in rare diseases. Our approach enabled stratified cost estimation to inform regulatory decision-making and offers a scalable framework to address evidence gaps in complex conditions.

RWD52
DATA-DRIVEN ALERTS TO SUPPORT THE CARE OF PEOPLE LIVING WITH EPILEPSY AND PROVIDE AN INFRASTRUCTURE FOR THE DEVELOPMENT OF REAL-WORLD EVIDENCE

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Objectives: Despite advances in ASM therapies, many people living with epilepsy (PWE) are still unable to achieve seizure freedom and mortality rates remain higher than the general population. Data-driven alerts can inform health care professions of adverse events, allowing early support and review during high-risk periods. NHS Greater Glasgow and Clyde have created a registry infrastructure comprising an epilepsy patient cohort and data-driven alerts visualised on an Epilepsy Dashboard, allowing timely support after seizure emergencies. The infrastructure also provides the opportunity to collect key variables as part of routine clinical practice, and an early priority has focused on those attending the emergency department (ED) as a result of a seizure emergency. Recent adaptations to the infrastructure allow the identification of prolonged seizure (PS) incidence in accordance with published consensus definitions, permitting a range of outcomes to be evaluated for these patients. ***Methods:*** Patients were initially identified through the near-live integrated Epilepsy Dashboard with seizure-related ED admissions between January 1, 2022, and December 31, 2022. Patients who met the current International League Against Epilepsy definition for epilepsy following manual review of the electronic patient records were included. Data were subsequently anonymised and linked to national routine health data. Future aims will incorporate history/incidence of PS for these patients. ***Results:*** In the original cohort, 726 epilepsy-related admissions were generated during the study period (531 PWE). The mean age was 47 (range 16-90) years. Seizure duration was noted in 375/531 (71%). PS were noted in 74/531 (14.0%), a seizure cluster in 86/531 (16.2%), and status epilepticus in 163/531 (30.7%). ***Conclusions:*** The infrastructure provides an efficient solution to support patients and affords an opportunity to collect key clinical variables under routine clinical practice. Merging granular data with routinely collected health data has the potential to provide a rich source of real-world evidence. Funding: UCB-sponsored.

RWD53
DECODING ASTHMA: A TALE OF TWO DATABASES

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Objectives: To estimate and compare asthma incidence, demographic patterns, and treatment profiles using two large-scale real-world databases in Spain: Telotrón® and The Andalusian Population Health Database (BPS). ***Methods:*** We conducted a retrospective observational study (2018-2024) using Telotrón®, a large-scale clinical database covering over 2.2 million individuals across seven Autonomous Communities in Spain. Telotrón® includes both primary care and hospital records and offers a country-representative view. For comparative purposes, BPS, which includes data from a single region, was also analyzed. New asthma diagnoses were identified using ICD-10 code J45 and ICD-9 493. We calculated incidence by sex and age group and compared prescribing trends between 2021 and 2023 by therapeutic class. ***Results:*** Asthma incidence ranged from 4.0 to 6.2 per 1,000 population in Telotrón® and 3.4 to 5.1 in BPS, with higher rates in women. A bimodal age distribution was observed in both datasets: in Telotrón®, 23.5% of cases were in those aged 0-15 and 24.5% in those aged 30-45; in BPS, 33.2% and 19.4%, respectively. ICS/LABA was the most prescribed class and remained stable over time, accounting for 39.89% of prescriptions in Telotrón® and 32.91% in BPS. Telotrón® also showed a higher proportion of SABA and biologic treatments. Among biologics, omalizumab was the most prescribed in both databases, accounting for 53.06% in Telotrón® and 45.66% in BPS. Dupilumab and Mepolizumab showed different percentages. ***Conclusions:*** Findings from Telotrón® and BPS were consistent in terms of asthma incidence, demographics, and treatment, supporting their use as complementary sources of real-world evidence. Telotrón® stands out for its broad geographic coverage, monthly data updates, and current treatments records. These enable faster study set-up and ongoing monitoring. These features make it especially suited for research on asthma and other conditions with seasonal or geographic variation.