prednisone, antidepressants, psychotropics, and anxiolytics/hypnotics with perinatal outcomes; (4) incorporation of other repeated measures (symptomatology and polypharmacy) for joint trajectories; (5) potential implications of the methodology from a regulatory perspective; (6) an interactive panel and audience discussion focused on the question, "Are longitudinal trajectory methods useful for studying medications in pregnancy? If so, what are the barriers to use?" The discussion will touch on strengths, limitations, and future directions of longitudinal trajectories in perinatal pharmacoepidemiology.

3 | Methodologic considerations for non-interventional studies evaluating outcomes of originator-to-biosimilar switching

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Background: A biosimilar is a biologic product that is highly similar to and has no clinically meaningful differences from an existing FDA-approved reference biologic product. Market entry of biosimilars may substantially impact treatment patterns as many patients may switch from the originator products to biosimilars for a variety of reasons, including provider preference, patient request, and formulary or contracting changes. Ensuring sound methodology in observational studies evaluating outcomes of biosimilar switching is critical for generation of robust real-world evidence.

Objectives: To provide an overview of the challenges in designing and conducting non-interventional studies of biosimilar switching patterns and outcomes and to offer methodological recommendations to mitigate these challenges, specifically regarding study design, variable measurements, bias, and analytic approaches. This session will be of benefit researchers interested in conducting observational studies of biosimilars and biologics.

Description: This symposium includes perspectives from academia, industry, and practicing clinicians. The Biologics and Biosimilars Collective Intelligence Consortium (BBCIC) has convened a workgroup to establish best practice recommendations for the conduct of observational studies of biosimilar and reference biologic switching. Members of the BBCIC Workgroup will share learnings as they relate to (1) challenges and gaps in observational studies of biosimilars (Dr Bosco); (2) implementation of epidemiologic designs including cohort, case-control, and case-crossover in biosimilar switching studies (Dr Desai); (3) the range of outcomes in biosimilar switching studies, including utilization endpoints such as switchback to the originator product, indication-specific effectiveness endpoints, and other endpoints of interest, such as immunogenicity and associated infusion/hypersensitivity reactions (Dr Curtis); (4) bias and confounding in biosimilar switching studies (Dr Kim); (5) application of analytic approaches, including propensity scores, disease risk scores, and instrumental variables (Dr Gagne); and (6) discussion of importance of well-conducted observational studies of biosimilar switching from a standpoint of various stakeholders (Dr Bradbury). The symposium will conclude with a session dedicated to address questions and comments from the attendees to facilitate discussion of all pertinent issues.

4 | Long live the "medical data janitors": International data quality assurance practices in distributed data networks

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Background: Ensuring data quality for distributed data networks is challenging.

Objectives: We will examine international practices in five distributed data networks that house a mixture of administrative claims data and electronic health record data including: the US Food and Drug Administration's (FDA's) Sentinel Initiative (Sentinel), the FDA's Biologics Effectiveness and Safety (BEST) Initiative, the US National Patient Centered-Clinical Research Network (PCORnet), Japan's Medical Information Database Network (MID-NET), and the Canadian Network for Observational Drug Effect Studies (CNODES).

Description: Each network will describe its data quality processes.

1. Sentinel: (a) "always ready" paradigm to quickly support many studies, (b) adherence to FDA best practices, and (c) continuous improvement of the data network. Sentinel is primarily a claims-based data network of public and private databases that accrue data on 70 million individuals continuously. (Maro, 15 min)
2. BEST Initiative/OHDSI (Observational Health Data Sciences and Informatics) data quality assurance practices include collaborative platforms for validation of (a) data—does it confirm complete data capture to agreed structure and conventions, (b) software—does it perform as expected, (c) clinical—does analysis match clinical intention, and (d) methods—do estimates measure what they purport to. (Reich, 15 min)
3. PCORnet: (a) foundational data curation establishes baseline level readiness for prep-to-research queries, (b) study-specific data curation assesses data for the cohort under study, and (c) findings from study-specific data curation inform development of foundational curation. PCORnet relies primarily on electronic health record data housed in dozens individual health systems. (Marsolo, 15 min)

4. MID-NET: (a) checking consistency between stored data and the original data in the hospital and implementing standardized data coding process, (b) adherence to government issued Good Post-Marketing Study Practice, and (c) continuous monitoring. MID-NET currently includes data on approximately 4 million individuals of 23 hospitals. (Uyama, 15 min)
5. CNODES: (a) routine QA processes conducted at the individual sites, (b) phased study implication including QA checks at each study phase, (c) processes for post-study data queries. (Filion, 15 min)
6. Moderator-Led Discussion (Sturkenboom, 15 min)

5 | Rare disease development programs: An update

Jasmanda Wu[1]; Cunlin Wang[2]; Daniel B. Horton[3]; Irene Petersen[4]; Susan Oliveria[5]; Stella Blackburn[6]; Jieying Jiang[7]; Robert LoCasale[1]

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Background: Many rare disorders are serious conditions with no approved treatments, leaving substantial unmet medical needs for patients with these conditions. The FDA Orphan Drug Act provides incentives associated with the orphan-drug designation to make it more financially viable for companies to develop drugs for small numbers of patients. The EMA also provides a number of incentives for medicines that have been granted an orphan designation by the European Commission. Over the past decades, several drugs, biologics, and devices have been approved and are available to patients with rare conditions. However, effective and safe treatments are still lacking for many rare disorders. Regulators worldwide recognize that rare diseases are highly diverse and are committed to helping sponsors create successful drug development programs that address the particular challenges posed by the disease.

In recent years, several strategies have been developed to improve the orphan drug development process, including incorporating novel epidemiology approaches into clinical programs, using patients' perspectives for improving trial design, and selection of meaningful endpoints and measurements. This forum is intended to highlight new developments in the regulatory landscape and various areas to enhance drug development programs for rare diseases.

Objectives: The objective of the symposium is to provide an in-depth review of new developments in the regulatory landscape, use of off-label drugs, epidemiology approaches, patient advocacy, and risk mitigation strategies for rare diseases drug development and research.

Description:

1. Overview of current regulatory environment for rare disease drug development (Cunlin Wang, Genentech, San Francisco, CA/ Former FDA employee, USA; Stella Blackburn, IQVIA, London/Former EMA employee, UK, 20 min)
2. Off-label drug use to treat rare pediatric diseases (Daniel B. Horton, Rutgers University, USA, 15 min)
3. Epidemiologic approaches and the use of real-world data for rare disease research (Susan Oliveria, IQVIA, USA, 15 min)
4. Incorporating the patients' perspective in drug development programs for rare diseases (Irene Petersen, University of College London, UK, 15 min)
5. Risk minimization strategies and post-marketing requirements for rare diseases therapeutic products (Jieying Jiang, Icahn School of Medicine at Mount Sinai, USA, 10 min)
6. Panel Discussion: Audience is invited to interact with all speakers (Moderator: Robert LoCasale and Jasmanda Wu, Sanofi, USA, 15 min)

6 | Validation of the reverse parametric waiting time distribution and standard methods to estimate prescription durations for warfarin

Julie M. Petersen[1]; Henrik Støvring[2]; Maja Hellfritzsch[1]; Jesper Hallas[1]; Anton Pottegård[1]

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Background: A common challenge in registry-based pharmacoepidemiology is the lack of valid information on the duration of drug exposure that should be assigned to a single prescription record, potentially affecting study validity due to exposure misclassification.

Objectives: To validate two different approaches for estimating prescription durations, using the oral anticoagulant warfarin as a case. The approaches covered assumptions of a fixed daily intake of either 0.5 or 1.0 defined daily dose (DDD), as well as estimates based on the reverse parametric waiting time distribution (rWTD) without covariates and with three different sets of covariates.

Methods: Estimates of prescription durations were calculated using data from the regional prescription database Odense Pharmacoepidemiological Database (OPED). We converted estimates of prescription durations to estimates of daily dose (total amount of drug obtained divided by estimated duration) and compared them on the individual level (using Bland-Altman plots) to actual prescribed daily doses of warfarin as recorded in a clinical anticoagulation database. Methods were evaluated based on their average prediction error (logarithmic scale) and their limit of agreement ratio (ratio of mean error ± 1.96 SD after transformation to original scale).

Results: Prescription durations were underestimated by 19% or overestimated by 62% when assumptions of 0.5 or 1.0 DDD, respectively, were applied, and the limit of agreement ratio was 6.721 for both assumptions. The rWTD-based approaches performed better when using the estimated mean value of the inter-arrival density,