

ABSTRACT

- ❑ Claims from clearinghouses are referred to as “**open claims**” while claims from insurance companies “**closed claims**”
- ❑ Open claims have the potential to be a rich source of observational data
- ❑ This poster will describe a methodology for evaluating open claims data by:
 - ❑ Using a cross section of patients that appear both in open/closed claims
 - ❑ Transforming the open/closed claims to the Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM) [1]

BACKGROUND

- ❑ **Clearinghouses:**
 - Used for “**claims scrubbing**” between the point of care and the insurance company
 - They provide transactional support between providers and payers to facilitate fast payment by minimizing errors during the claims submission process [2]
 - Claims are considered “**open**” in that they contain the same information as data available from large payers except for final adjudication (considered to be “**closed**”)
- ❑ **Open claims have not been utilized for observational research as regularly as closed claims** for many reasons, one of which being because members are enrolled at the provider level rather than at the patient level
- ❑ The OMOP CDM is an effective way to standardize observational health databases however it has yet to be employed on open claims in a way that enables assessment of the data itself for use in epidemiological research [3]

OBJECTIVES

1. Design metrics and cohorts meant to evaluate open claims
2. To enable assessment of the closed claims, translate cross section of open/closed claims into the OMOP CDM

METHODS

- ❑ Medical and pharmacy data from open claims was obtained and, to serve as a control, pharmacy data from a prescription benefits plan was linked at the patient level using protected health information (PHI)
- ❑ Non-linked commercial medical claims were also obtained from Truven Health MarketScan® Commercial Claims and Encounters Database for use as a high-level comparison

METHODS (cont.)

CDM CONVERSION TECHNIQUES

- ❑ The raw dataset contained information from two separate sources (open and closed claims) which necessitated designing the tables so that each source was still identifiable after transformation. Techniques included in **Table 1**.

AIMS

1. To quantify the missing data from the open claims that would be provided by the closed claims system and vice-versa
2. Identify drugs (by ingredient) that occur more often in one database versus the other
3. Assess if open claims capture the same proportion of conditions as trusted closed claims system during the time prior to drug exposure

METRICS

1. Measure the overlap between the **open / closed claims** for prescription drugs occurring per person per day during the same time period for a set of defined cohorts (**Figure 1**).
2. Compare the proportion of drug exposures at the ingredient level among persons in both the open / closed systems during the same time period for a set of defined cohorts (**Figure 2**)
3. For a set of defined new user drug cohorts, compare the baseline prevalence of conditions between the open claims and Truven Health MarketScan® Commercial Claims and Encounters Database

Figure 1: Example of drug overlap at the claim level

PERSON_ID	DRUG_CONCEPT_ID	DRUG_EXPOSURE_START_DATE	DRUG_TYPE_CONCEPT_ID	REFILLS	QUANTITY	DAYS_SUPPLY
XXXXXX	957136	1/10/2013	38000175	5	30	30
XXXXXX	957136	1/10/2013	38000177	5	30	30

Figure 2: Example of drug overlap at the ingredient/exposure level

PERSON_ID	DRUG_CONCEPT_ID	DRUG_EXPOSURE_START_DATE	DRUG_TYPE_CONCEPT_ID	REFILLS	QUANTITY	DAYS_SUPPLY
XXXXXX	957136	1/10/2013	38000175	5	30	30
XXXXXX	19023799	2/3/2013	38000177	4	30	28

957136 -> Furosemide 40 MG
19023799 -> Furosemide 40 MG Oral Tablet [Lasix]

Table 1. CDM conversion techniques and examples

Technique	Example
*_TYPE_CONCEPT_ID as proxies for each database	<ul style="list-style-type: none"> • Drug data from closed claims were given DRUG_TYPE_CONCEPT_ID = 38000177 • Drug data from open claims were given DRUG_TYPE_CONCEPT_ID = 38000175
PAYER_PLAN_PERIOD and OBSERVATION_PERIOD to capture the amount of time contributed per person to each database	<ul style="list-style-type: none"> • Enrollment information from closed claims was used to create PAYER_PLAN_PERIOD • Min and max claims dates from open claims were used to create OBSERVATION_PERIOD
COHORT table to house cohorts of interest for evaluation purposes	<ul style="list-style-type: none"> • Open claims contained a file of “stable” providers (providers that consistently sent a large number of claims to the clearinghouse). This file was used to create a cohort of patients in the COHORT table that visited only those providers.

CONCLUSIONS

- ❑ The use of clearinghouse data in observational health research is still a debated topic though **little is understood about how well open claims represent the true picture of healthcare utilization** for a given set of patients
- ❑ By defining a set of metrics and designing an ETL in a way that allows for the assessment of those metrics, the **OMOP CDM can be leveraged to create a framework that makes the evaluation of such data from an open system feasible**

REFERENCES

1. OMOP Common Data Model [Webpage]. 2015 [cited 20 Jul 2015]. Available from: <http://www.ohdsi.org/data-standardization/the-common-data-model/>.
2. Sculley J. What is a clearinghouse for medical claims, and what do they do? 2014.
3. Voss E, Makadia R, Matcho A, Ma Q, Knoll C, Schuemie M, et al. Feasibility and utility of applications of the common data model to multiple, disparate observational health databases. Journal of the American Medical Informatics Association. 2015 2015 May;22(3):553-64. Epub 2015 Feb 10.

CONFLICT OF INTEREST STATEMENT

Clair Blacketer and Erica Voss are full time employees of Janssen Research and Development, a unit of Johnson and Johnson. The work on this study was part of their employment. They also hold pension rights from the company and own stock and stock options.