## **RETROSPECTIVE DATABASES IN HEALTH OUTCOMES,** PHARMACOEPIDEMIOLOGY AND PHARMACY PRACTICE RESEARCH

## BACKGROUND

• Retrospective databases offer diverse opportunities for health outcomes, pharmacoepidemiology, and pharmacy practice researchers to perform real-world observational studies.

## **OBJECTIVES**

- To assess retrospective databases used in articles published in 3 prominent pharmacy journals between 2020 and 2024
- To classify and quantify articles by database used, country of origin and type of research question answered

## METHODS

- Articles published during 2020-2024 in the Journal of the American Pharmacist Association (JAPhA), Research in Social Administrative Pharmacy and Pharmacoepidemiology and Drug Safety (PDS) were examined to select studies that used retrospective databases as their data source
- Population representative electronic health record studies were included along with longitudinal prospective cohort studies.
- All included articles were evaluated to identify the type of database used; the research question addressed, the sample size and the country of origin.
- Articles were assessed by 2 reviewers and a decision for inclusion and research question classification was made through discussion. Data accessibility and population representation were considered for inclusion and exclusion.
- Prospective cohort repositories with longitudinally collected population representative data were included.

## RESULTS

- A total of 621 articles met the inclusion criteria.
- The studies used the following databases (Figure 1): insurance claims (n=317) population electronic health records (EHR) (n=69), administrative registries (53), national surveys (n=42), United States Food and Drug Administration (FDA) databases and registries (n=39), prospective cohort repositories (n=30), adverse drug reaction registries (n=25), state prescription drug monitoring program databases (n=20), oncology registries (n=20), disease specific registries (n=18), pregnancy registries (n=9), other type of databases (n=9), toxicology registries (n=7), immunization registries (n=4), adverse vaccine reaction registries (n=3).

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### RESULTS

# (RSAP), and



methodology (n=128), adverse events (n=109), utilization patterns (n=91), prescribing patterns (n=48), sociodemographic factors pregnancy (n=28), adherence (n=23), co-prescribing patterns (n=21), services (n=6), medication errors (n=5), drug misuse (n=4), drug manufacturing (n=4), other (n=4), drug information (n=3), and insurance coverage (n=2)



(n=38), health outcomes (n=37), policy impact (n=28), drug safety in<sup>•</sup> drug safety (n=20), costs (n=14), drug effectiveness (n=8), pharmacy

## Figure 2. Research topics

Prescribing patterns Utilization patterns Drug Safety in Pregnancy Policy Impact Drug Safety Costs Medication errors Other Drug Information Insurance coverage

claims

- pharmacy journals during 2020-2024.
- and utilization patterns.
- patterns medication use.

1.Schneeweiss S, Desai RJ, Ball R. A future of data-rich pharmacoepidemiology studies: transitioning to large-scale linked electronic health record + claims data. Am J Epidemiol. 2025;194(2):315-321. doi:10.1093/aje/kwae226 2.Zhong H, Thor P, Illescas A, et al. An Overview of Commonly Used Data Sources in Observational Research in Anesthesia. Anesth Analg. 2022;134(3):548-558. doi:10.1213/ANE.0000000000005880



## RESULTS

• Articles using databases originated from 38 countries (Figure 3)

## CONCLUSIONS

Most frequently used database in this study was insurance

Despite valuable insights that can be gained from other types of database studies such as longitudinal national surveys and longitudinal prospective cohort databases – these were used much less frequently among the studies published in the three

• Common research topics were methodology, adverse events

• Retrospective databases can help to answer question related to data validity, real world prevalence of adverse events and

## REFERENCES