The More You Know:
Linkage of Public Health Datasets and All Payer Claims to Further Population-Level Opioid Research

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Approach

In compliance with various data governance statutes, Comagine worked closely with the Oregon Health Authority (OHA) Public Health Division to develop a linkage plan for linking the APCD to multiple state administrative datasets to create the Comprehensive Opioid Risk Registry (CORR), which spans 2013-2018.

Step 1
- Comagine probabilistically linked using the fastLink package in R patient-level APCD data to Oregon Vital Records data using name and date of birth. Socioeconomic status indicators for the patient’s census tract from the US Census were linked using FIPS codes. The resulting dataset provides data on fatal opioid overdoses, opioid-related ED visits, community and household groupers, condition flags and comorbidity estimates, and community-level covariates.

Step 2
- State statutes limit the sharing of identifiers for Hospital Discharge Data, so a Comagine analyst visited the OHA to conduct patient-level linkages with an OHA analyst. These data identify opioid-related hospitalizations regardless of payer.

Step 3
- In preparation for linkage to the Prescription Drug Monitoring Program (PDMP) data, the Comagine analysts are currently creating a minimally necessary reference dataset. This is a significant undertaking that requires both financial and stakeholder support. Ultimately, these databases will be used to further opioid research with the goal of understanding predictive factors to prevent overdoses.

Population Studied

Adults in the voluntary Oregon All Payer Claims Dataset (APCD) housed at Comagine Health. The APCD includes outpatient, inpatient, ED, and pharmacy claims for 81% of Oregonians.

Research Objective

Administrative datasets used for opioid research are often limited, restricted to a subset of a population (e.g., a single payer type) or a subset of records (e.g., paid pharmacy claims). Our objective was to link, at an individual patient level, public health datasets with all payer claims and census data to create a richer administrative dataset that would allow for a multi-level assessment of patient, prescription, household, and community-level predictors of fatal and nonfatal opioid overdoses.

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Comprehensive opioid research datasets require a substantial amount of preparation and cleaning, but can yield valuable information. Databases like the CORR are unique in that they link prescription and clinical history across payers with other factors predictive of overdose.

Implications

Using public health, medical, and pharmacy claims, other states could replicate our methodology to create a state-specific CORR. This is a significant undertaking that requires both financial and stakeholder support. Ultimately, these databases will be used to further opioid research with the goal of understanding predictive factors to prevent overdoses.

Principal Findings

Databases like the CORR are unique in that they link prescription and clinical history across payers with other factors predictive of overdose.