



CASE STUDY

Utilizing an eligibility proxy to reduce missing electronic health record (EHR) data and minimize surveillance bias

The Optum® EHR Database was used for testing the effectiveness of implementing an eligibility proxy period among chronic obstructive pulmonary disease (COPD) patients. The database is a de-identified data offering that includes 86 million unique lives and is representative of the US population with insight over many years.

Client objectives

Minimize the limitations of EHR data sources to improve the quality of health outcomes research reporting.

Project details

- A multiple-simulation study was conducted, using a large Optum EHR benchmark dataset for 6,717 U.S.-based COPD patients, each having 12 months of follow-up.
- The benchmark provided parameter estimates for 9,000 differing simulated datasets that represented 10%–90% of patients with between one and 11 months of continuous missing EHR data.
- The simulated datasets that involved the eligibility proxy ranged from 671 to 6,045 patients based on the percent of missing data.
- These results showed improved performance for a wide range of variable parameter estimates when the eligibility proxy was included for the first and last month of follow-up.

Results

This study showed customers that implementing an eligibility proxy for a large cohort of patients can help avoid the detrimental impact of missing EHR data and minimize the possibility of surveillance bias when performing outcomes research.

Source:

Yu, T. C., Zhou, H. Benefits of applying a proxy eligibility period when using electronic health records for outcomes research: A simulation study. *BMC Research Notes*. 2015;8(1):229.

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