How Insurance Claim Data can Help in Health Outcomes Research: An Indian Perspective

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Quality of Evidence in EBM

DBM: Sources for Data

- Evidence-based medicine (EBM): The conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.
- EBM is regarded as the gold standard of clinical practice.
- The best evidence in EBM is provided from Systematic reviews and meta-analyses, which in turn are derived from randomized clinical trials (RCTs).
- Most treatment guidelines are also based on good-quality RCTs.
- Thus, RCTs form the bedrock of evidence-based medicine (EBM).

History of Decision-Making in Medicine

Advantages of Claims Data

- Information about episodes of care different from healthcare services and settings located at geographically distinct locations can be captured.
- The effect of drug therapy on cohorts of patients and specific patient subpopulations can be examined.
- They are population-based, and do not involve exclusion of patients with or without certain characteristics (unlike what is seen in RCTs), and hence more generalizable.
- Relatively inexpensive to obtain than RCTs.
- Include large numbers of cases which vary in their presentation and outcomes.
- Outcomes of long-term follow-up can be analyzed.
- Unblinded by randomization.
- Large sample size will make the statistical methods more consistent.

Disadvantages of Claims Data

- The population characteristics are largely influenced by the insurance plan, plan benefit design, and the variables of the database.
- The nature of information is primarily administrative rather than clinical.
- The huge amount of data requires expertise to analyze.
- Incomplete diagnostic and provider identification data.
- Confidentially issues: inappropriate release of sensitive data can be troublesome not only for the researchers but also for the involved insurance companies.
- Frequent merger and acquisitions of insurance companies can lead to incomplete data.
- Analyzing data based on uniformity of diagnosis may not be achieved, thus only aggregated data may be used on a professional coding such as the ICD-10.

Role of Claims Data as Resource for Outcomes Research in India

- Claims data in India are insufficiently used for health outcomes research.
- An important reason for this is that the penetration of health insurance is not up to the mark in India.
- It is expected that in the near future health insurance will become more popular in India, since:
  - Indian health care expenditure is predominantly out-of-pocket, and the healthcare costs are escalating day-by-day.
  - More and more Indian adults are understanding the value of health insurance.
- Claims data may play a significant role.

Data-based Medicine

- RCT data may not truly represent the real-world outcome of any treatment.
- If real-world data is analyzed, the resulting data may represent the actual outcome of an intervention - the so-called Data-based Medicine (DBM).
- DBM is an emerging concept.
- It depends on the analysis of the extensive health records that are available across a particular geographic data from all possible sources (often termed as ‘Big data’) for taking healthcare decisions.
- Big data analysis can provide multiple forms of health-related information about any condition:
  - Natural history of disease.
  - Effectiveness of any treatment modality.
  - Impact of an intervention on any objective parameter.
  - Cost-effectiveness of any treatment modality.

Recommendations

- With the increased penetration of health insurance in India, appropriate analysis of the resulting claims data can provide invaluable insights into demographics, disease trends, efficacy and effectiveness, and real-world information, from the Indian perspective.