PHARM.D • YEAR 5

Pharmacoepidemiology & Pharmacoeconomics

CHAPTER 1.5

Sources of Data for Pharmacoepidemiological Studies



PPT CHAPTER COVER

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Ad Hoc Data Sources

What are they?

Ad hoc data are collected specifically to answer a research question.

Researchers select the population, exposure measures, outcomes and follow-up schedule.

Interviews, questionnaires and clinical assessments can capture lifestyle, perceptions, adherence and confounders.



Considerations

Tailored measurement can improve relevance, but high internal validity is not automatic.

Time, staffing and cost may restrict sample size.

Recall errors, interviewer effects and losses during follow-up require planning.

Study-Specific Collection Designs

Cohorts

Cohorts collect baseline information and follow outcomes, such as cardiovascular events after a diabetes medicine.



Baseline information

Follow



Cardiovascular events

Case-control studies

Case-control studies investigate earlier exposure among cases and controls, such as contraceptive use and thromboembolism.



Cases (thromboembolism)

Look back



Contraceptive use



Controls (no thromboembolism)

Surveys

Surveys can record treatment satisfaction and perceived adverse effects after antidepressant use.

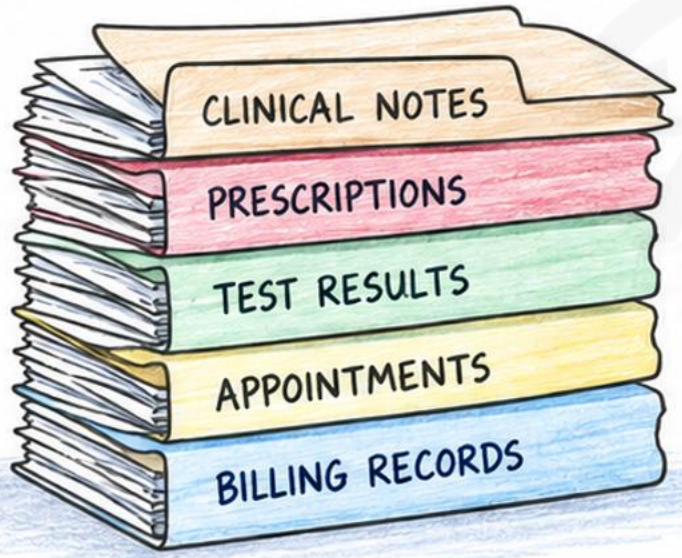


Pragmatic or post-marketing trials may contribute relevant data.

The collection method should match the **study question**, with consistent definitions and an appropriate comparison group.

Automated Data Systems

Automated systems contain routinely collected clinical or administrative records rather than newly collected research data.



Routine clinical records
(collected for care or billing)



Digital longitudinal record
(across time)

Advantages

- Large datasets can improve precision and support efficient longitudinal studies.
- They reflect routine care, but the represented population depends on system coverage.

Limitations

- Data collected for billing or care may lack the detail required by a research question.
- Coding errors, missing lifestyle information and privacy restrictions remain important.
- Large size alone does not guarantee validity or generalizability.

Administrative Claims



What are administrative claims?

Claims are primarily collected for billing and administration.

They include diagnosis and procedure codes, hospital encounters and reimbursed medicine dispensing.

Medicare, Medicaid and private insurers are examples of claims sources.

Repeated records support utilization, cost and longitudinal outcome studies.

Key limitations

Laboratory values and symptom severity are often limited or absent.

Coding errors, uncovered care and missing OTC use can misclassify exposure or outcomes. Reimbursement records do not confirm ingestion.

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