PHARM.D • YEAR 5

Pharmacoepidemiology & Pharmacoeconomics

CHAPTER 1.4

Pharmacoepidemiological Methods



PPT CHAPTER COVER

DOCTOR OF PHARMACY

Drug Utilization Review (DUR)

Drug utilization review (DUR) systematically evaluates prescribing, dispensing and medication use.

Before treatment



Prospective review checks a prescription before dispensing.

During treatment



Concurrent review monitors treatment while it is being received.

After treatment



Retrospective review examines previously recorded care.

The review considers indication, dose, duration, interactions, adherence and polypharmacy.
Patient-specific information and explicit criteria help identify opportunities for safer and more effective treatment.

DUR: An Illustrative Audit

Illustrative audit

The PDF describes a six-month retrospective audit of proton pump inhibitor use.

It reports over 40% of use without an appropriate indication, followed by a 30% reduction in inappropriate prescripttions after education and guidance.

These are uncited teaching figures, not a verified study result.



Key points

A rigorous audit specifies eligibility, indication criteria, denominators and the comparison period.

Re-audit tests whether practice improved; concurrent changes may also explain an observed reduction.

Case Reports



What is a case report?

A case report describes one patient's presentation, diagnosis, treatment and follow-up.

Unusual reactions or unexpected outcomes can generate an early safety signal.

Key points

There is no comparison group or population denominator.

Illustrative example: a 45-year-old develops a rash after starting an antihypertensive; the rash resolves after withdrawal.

This dechallenge supports investigation but does not prove causality.

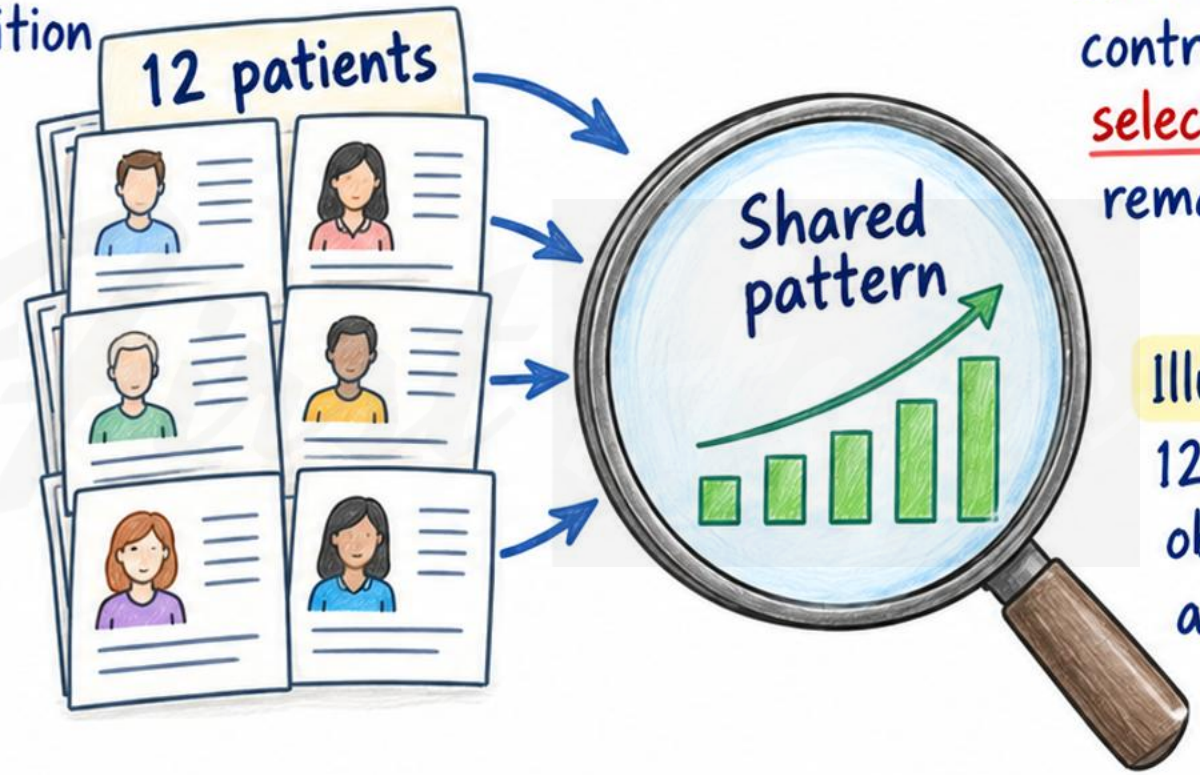
Further evidence is needed before generalizing the risk or claiming a labeling change.

Case Series

A case series describes several patients with a similar condition or treatment.

Prospective series collect observations as events unfold.

Retrospective series use existing records.



Shared patterns can justify controlled research, but **selection bias** and **confounding** remain.

Illustrative PDF example:
12 psoriasis patients observed for six months after a biologic treatment.

Improvement without a control group cannot establish comparative effectiveness.

Record eligibility and follow-up, including unfavorable outcomes rather than selecting only successful cases.

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