PHARM.D • YEAR 5

Pharmacoepidemiology & Pharmacoeconomics

CHAPTER 1.1

Definition and Scope of Pharmacoepidemiology



PPT CHAPTER COVER

DOCTOR OF PHARMACY

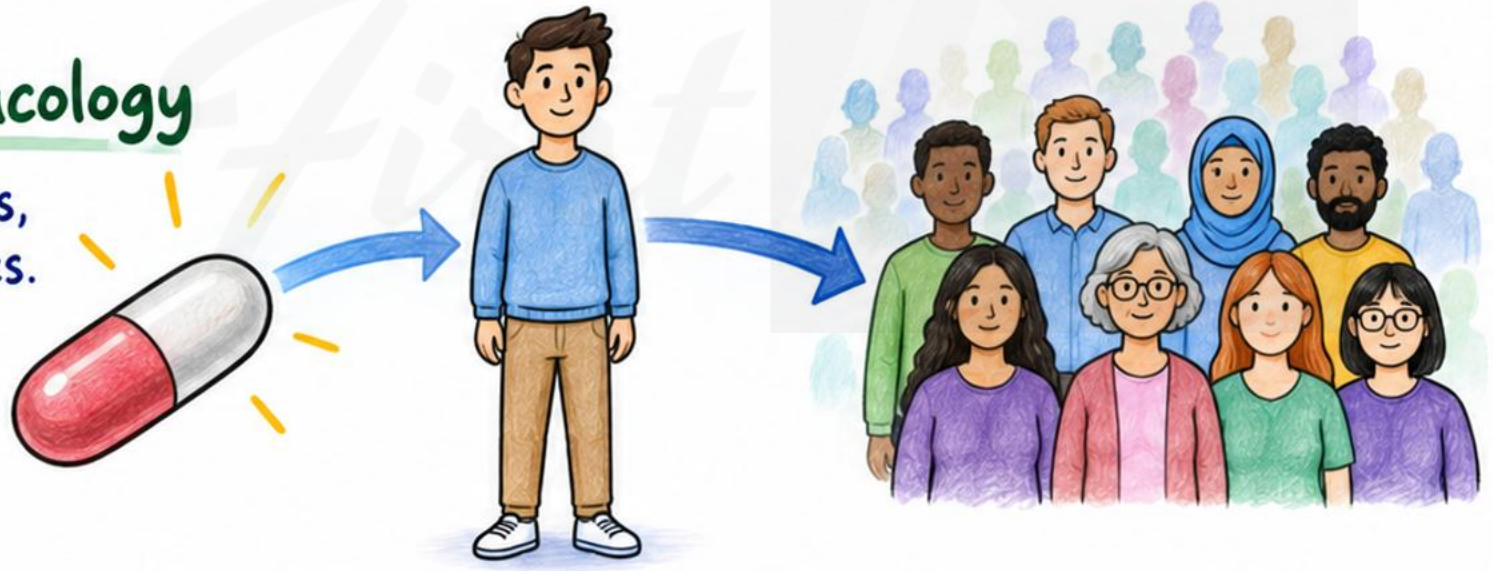
Pharmacoepidemiology

Pharmacoepidemiology studies medication use and effects in populations using epidemiological methods.

It evaluates patterns of prescribing, real-world effectiveness, safety and health outcomes.

Clinical pharmacology

explains drug actions, kinetics and dynamics.



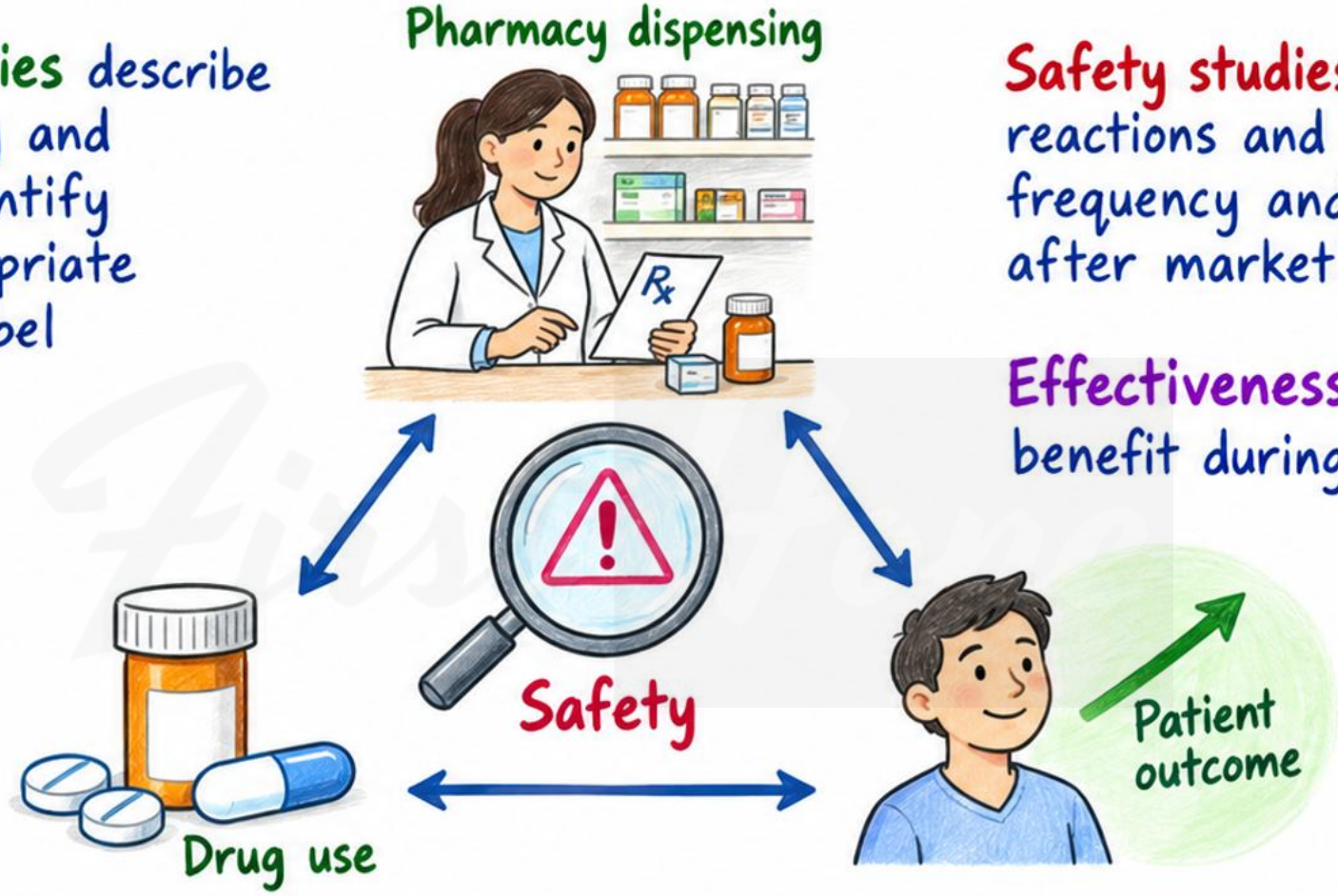
Epidemiology

examines the distribution and determinants of health events.

The field links individual drug knowledge with population evidence. Public health, biostatistics, data science and regulatory policy contribute to its methods.

Scope: Drug Use and Outcomes

Drug utilization studies describe prescribing, dispensing and consumption. They identify excessive use, inappropriate treatment and off-label patterns.



Safety studies detect adverse reactions and investigate their frequency and risk factors after marketing.

Effectiveness studies evaluate benefit during routine care.

Efficacy describes performance under controlled trial conditions.
Effectiveness describes benefit during routine care.

Comparative effectiveness research compares treatment options used in practice.
Differences in patient characteristics and adherence require careful analysis.

Scope: Policy and Special Populations

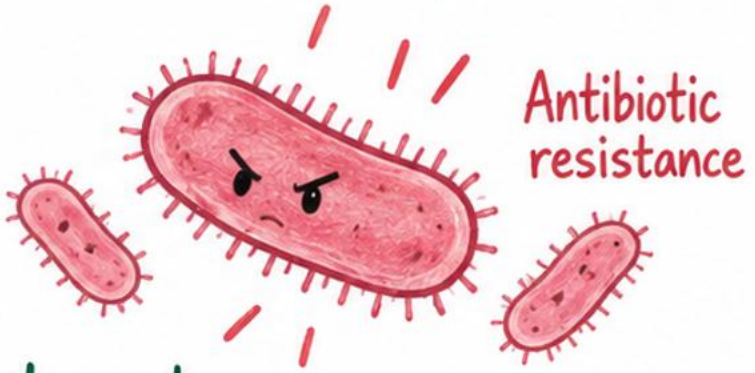
Population evidence supports formulary selection, prescribing restrictions, safety warnings and health technology assessment.

Special populations include children, older adults, pregnant women and people with comorbidities.



Studies examine access disparities as well as medication safety.

Antimicrobial-use surveillance tracks misuse and resistance patterns. Its findings guide rational prescribing and stewardship.



Decisions combine study findings with clinical judgment, uncertainty and the wider public-health context.

Origins of Population Drug Safety

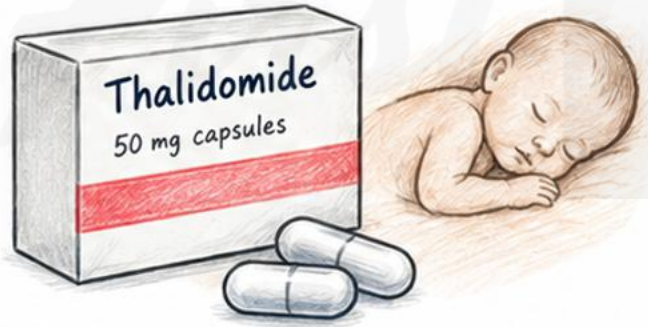
Early foundations

Early observational medicine and pharmacology provided the foundations, before systematic population drug monitoring developed.



1961

The thalidomide tragedy, recognized in 1961, exposed serious gaps in pregnancy safety and post-marketing surveillance.



1970s – 1980s

During the 1970s and 1980s, epidemiological approaches to medication effects gained recognition.



1978

Uppsala Monitoring Centre began its work in 1978.



Pre-1960s — 1961 — 1970s – 1980s — 1978

These developments strengthened the need to study medicines beyond their pre-approval trials.

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