Pharmacogenomics (PGx)

Genetic Variant
CYP2D6*4

Altered Function
↓ Activity

Dose Adjustment

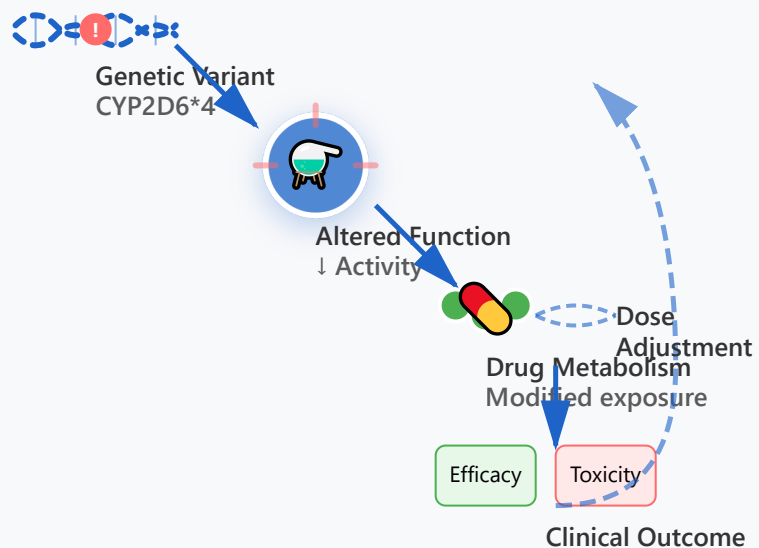Drug Metabolism
Modified exposure

Efficacy

Toxicity

Clinical Outcome

PGx Variants

Genetic variations affecting drug response, metabolism, and efficacy

Drug Metabolism

CYP450 enzymes and transporter polymorphisms impact drug levels

Dosing Algorithms

Genotype-guided dosing for warfarin, clopidogrel, and more

CPIC Guidelines

Clinical Pharmacogenetics Implementation Consortium standards

Implementation Barriers: Cost, infrastructure, education, and workflow integration remain challenges for widespread PGx adoption