C-Path’s Quantitative Medicine Program

C-PATH’S QUANTITATIVE MEDICINE PROGRAM
Creating tools to ensure an efficient translation between the stages of the drug development process

Right Target
Systems pharmacology modeling
C-Path is developing a systems pharmacology model for TB, which quantifies the interplay between the bacteria, the patient's immune system, and the drugs used to treat TB.

Right Drug(s)
Physiologically based pharmacokinetic modeling
C-Path completed a physiologically based pharmacokinetic model for the TB-infected lung, together with models for all standard-of-care drugs for TB, and a model of a virtual South African population, which can be used to better understand how drugs distribute through the patient’s body to reach the bacteria in the lung.

Right Dose(s)
Exposure-response modeling
Pharmacokinetic/ Pharmacodynamic modeling
C-Path quantified the predictive accuracy of the Hollow Fiber System Model for TB (HFS-TB), a major advancement for early and effective evaluation of drug selection and dosing for drug combinations against tuberculosis. This in vitro model allows for the evaluation of drug combinations under relevant conditions that mimic the various disease states of the TB organism.

Right Patients
Disease progression modeling
Clinical trial simulation tools
C-Path completed the first regulatory endorsed Alzheimer's disease clinical trial simulation tool and the model that supported the qualification of Total Kidney Volume for polycystic kidney disease. C-Path is now starting modeling and simulation efforts in Parkinson’s disease and Duchenne muscular dystrophy.

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