HIV Natural History Simulation

- CD4, VL, HIV status
- Simulate cohort (10K-1 Million)
- Daily tracking of simulated patients
- Rates of movement between transmission model compartments
- Model Compartment: Age, Act, Alc, IDU, HIV, VL, CD4, Sex

HIV Transmission Model

- Population characteristics
  - Age: 0-4, 5-9, 10-14, 20-24, 25-29, 30-35, 39-40, 40-45, 45-50
  - Sexual activity level: abstinent, monogamous, multiple partnerships, CSWs, clients of CSWs
  - Injection drug use: Non-IDU, IDU
  - Unhealthy alcohol use: Non-ALC, ALC

- Clinical Factors
  - HIV status: negative, initial infection, undetected, detected, in care, on treatment, dead
  - VL: 0-2.5, 2.5-3.5, 3.5-4.5, 4.5-5.5, >5.5
  - CD4: 0-50, 51-200, 201-350, 351-500, >500

- Sexual orientation and mixing
  - Straight Males, Bisexual Males, Homosexual Males
  - Straight Females, Bisexual Females, Homosexual Females