

1. Time of Disease Progression

Model: Relative Risk (similar to Cox model)

Baseline features

Time of last negative test

Fitted value
Continuous outcome

Fitted velocity
Continuous outcome

Fitted log odds
Binary outcome

**Shared Patient-Specific
Random Effects**

2. Continuous Longitudinal Data

Model: Linear Mixed Effects

Baseline features

Random effects

Time of measurement

3. Binary Longitudinal Data

Model: Logistic Mixed Effects

Baseline features

Random effects

Time of measurement