

# Development process for Dengue's AI Prescriptive Model

XX%

## 1. Business Understanding

95%

Prioritization & refinement of indicators (expert validated)

- Identify strategic needs (Secretary of Health, stakeholders)
- Define operational objectives (prioritization, intensity, resources)
- Delphi method with experts (refinement of indicators)

## 2. Data Understanding

95%

Characterization report & data gaps

- Review information sources (actions, interventions, barriers)
- Explore historical intervention patterns & outcomes

## 3. Data Preparation

90%

Structured dataset for training  
Initial prescriptive

- Integrate spatial/temporal data (1 km<sup>2</sup> pixels, weeks)
- Generate decision variables (intensity, cost, coverage, effectiveness)
- Standardize databases (interoperability with predictive model/dashboard)

## 4. Modeling

85%

Initial prescriptive model implementation

- Define multivariable decision rules (predictive outputs, resources, evidence)
- Apply prescriptive approaches:
  - Multi-objective optimization
  - Scenario simulation

## 5. Integration

70%

Integrated operational prototype & user guide

- Prototype integrating predictive + prescriptive models
- Visualization of recommendations (heat maps, ranking by neighborhood/pixel)
- User-friendly interface for decision-makers

## 6. Model Evaluation

30%

Technical & operational validation report

- Internal evaluation (historical scenarios)
- External validation (feasibility, cost, operational reality)
- Iterative expert feedback adjustments