

2. Realism

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Modelling

A mathematical model is a tool for deducing, logically, the consequences of a sufficient set of assumptions.

It is no more, but no less, than a tool for thinking clearly about the problem at hand.

Realism

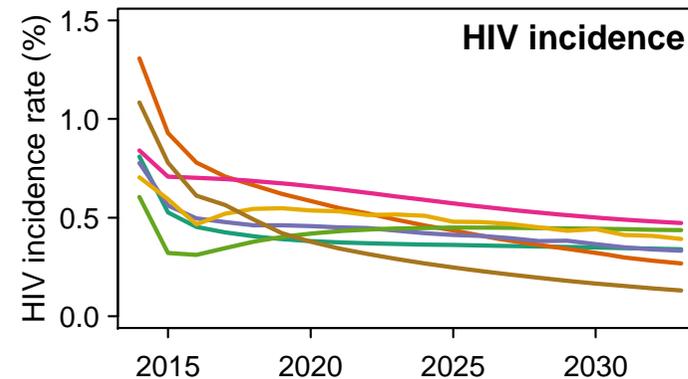
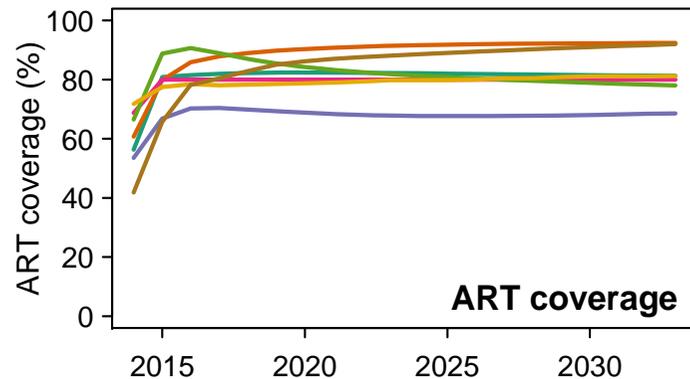
- *“Modelling should explicitly consider factors that may reduce the effectiveness or increase the costs of policies when introduced into routine practice, and examine the plausibility of assumptions required for policy success.”*

Practices

- 2.1 Realistic assumptions should be made about policy costs and effectiveness.
 - Imperfect implementation.
 - Sub-optimal uptake and adherence.
- 2.2 Analyses should consider the additional costs of service expansion.
 - Economies and dis-economies of scale.
- 2.3 Where there is little prior experience of policies, costs and outcomes sensitivity analyses should be conducted.
- 2.4 The modelling process should remain objective.
 - Danger that desires of advocacy positions subtly influence modelling assumptions → damage credibility of broader modelling enterprise.

What are we trying to avoid?

“Intervention scale-up was immediate—a fraction of individuals eligible for treatment were assumed to initiate treatment at a constant rate from that point, along with individuals who became eligible for treatment after the start of the intervention period.”



Comments

- Relatively uncontroversial principle.
- What does it look like in practice?
 - Do we ‘know it when we see it’? Modelling community doesn’t have a great track record.
 - This is an empirical question.
 - Modelling strategies vs. technologies (Salomon)
- Challenge: Eliciting assumptions that can be modelled \leftrightarrow translating model parameters about cost/scale-up into programmatically meaningful quantities.
 - ‘80% coverage’ can mean a lot of different things for long-term programmatic implementation.
- Sensitivity analysis: how to do it well?
 - Probabilistic uncertainty analysis makes sense **if** the outcome of interest is probabilistic. A cloud of points can obscure understanding.
 - Effective sensitivity analysis flows from logical deductive process about the consequences of key assumptions.
- Also, implication of uncertainty for policy setting. Opportunity for course correction?
- Question: other dimensions of ‘realism’ to consider? Or a more focused label?