Analysis driven decision-making for HIV programmes

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1. WHO HIV Treatment Guidelines 2013 and 2015
   — Inputs by the HIV Modelling Consortium
2. Comparing clinical and population health decision-making: expanding the notion of benefits vs harms
3. The appropriate role of quantitative analysis in international and country-level HIV policymaking
Aim & objectives of the HIV Modelling Consortium

The HIV Modelling Consortium aims to improve scientific support for decision-making through the co-ordination of a wide-range of research activities in mathematical modelling of the HIV epidemic

The Consortium’s key objectives are to:

• Identify questions that demand mathematical modelling input and identifying new modelling results that may require further validation.
• Facilitate sharing of information; modelling techniques, data and expertise between research groups.
• Provide a forum for rigorous review of new mathematical modelling research and tools.
• Provide funding through sub-contracts to commission research to address those needs.
WHO HIV Treatment Guidelines, 2013 and 2015
WHO HIV Treatment Guidelines, 2013 and 2015

• Extensive consultative process to inform clinical decisions on ART delivery
  – Included (i) meta-analyses & systematic reviews; (ii) modelling/economic evaluation; (iii) community values & preferences

• Series of questions formulated using the PICO approach (population, interventions, comparators, outcomes)
  – How to test and identify HIV positive individuals?
  – When to start ART (eligibility criteria)?
  – What ARV regimens to use?
  – How to monitoring patients and switch to 2^{nd} line?

• Decision-making followed the GRADE methodology (based upon quality of evidence and strength of recommendations)
  – Not immediately obvious where modelling/economics should fit within this process; it’s been a topic for an evolving discussion.
1. When to start ART: CD4<350 or CD4<500?

2. How to monitor patients on ART: clinical, CD4 or viral load monitoring?
1. Where in the population are HIV-related deaths occurring?

2. How may patient monitoring enable more efficient ART delivery approaches?
Outline

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Comparing clinical and population health decision-making

• There’s a general perception that WHO HIV treatment guidelines are about making recommendations on clinical strategies.

• However.....

‘Primary audience is national HIV programme managers ... should help to shape the priorities of policy-makers’
Comparing the needs of clinical decision-making and population health policymaking

• Clinical decision-making
  Making choices for individual patients on the basis of clinical effectiveness at a particular point in time
  - Informed through RCTs/meta-analysis or other forms of evidence.
    Recommendations using e.g. GRADE methodology.

• Population health policymaking
  Making decisions for whole populations. Relies upon evidence but recognizes needs outstrip means
  - Requires a modelling framework to determine health impacts, priorities and greatest claims on limited resources
Framework for informing policy decisions

Goal: improve health benefits across the population

Many options for allocating limited resources
- Prevention
- Diagnostics
- ARVs/drugs
- Care and OI treatment
- Systems interventions

Is the benefit gain from the new intervention likely to be greater than the benefit foregone?
Reconciling clinical and population health decision-making

Clinical decision-making

- Provide the intervention that is most effective (for the patient)
  - Effectiveness = the extent to which an intervention does more good than harm*

Population health decision-making

- Provide the intervention that is cost-effective (i.e. effective for the population)
  - Depends upon whether the intervention offers more good than harm, where harm includes opportunity costs (i.e. harm to others)

* EU High Level Pharmaceutical Forum (Oct 2008)
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Lessons from modelling experiences in HIV

- Engagement with other disciplines and policymakers is vital
  - In the development of analyses & in their use and interpretation

- This is because judgements are inevitable:
  1. **Scientific judgements**
     - Available use of all available evidence, over which there may be reasonable disagreement
     - Exploring the implications of uncertainty: prices change, new interventions emerge, evidence evolves
  2. **Value judgements**
     - Reasonable focus on health gains, but also other social concerns: distributional (notions of equity), financial protection, other sectors
     - Whose mandate is it to make trade-offs across these?

Ultimately, there is need to support, not undermine, processes of deliberation

..... Humility as to the contributions of our disciplines.
Summary

• WHO HIV Treatment Guidelines have incorporated modelling and economic analysis
  – However, analyses don’t fit comfortably within the GRADE process.

• Tensions between clinical and population health decision-making exist but can be overcome
  – An expanded notion of benefits versus harms (to the whole population) can go a long way to reconciling differences.

• Modellers/economists don’t (nor should we) have all of the answers
  – Judgements are inevitable and we need to be careful to support, not undermine, important processes of deliberation.
Thank You