The use of specialty training to retain doctors in Malawi: a cost-effectiveness analysis

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Health workers have many options in the labour market
Specialty training

- Particularly valued incentive for doctors
  - Small specialist workforces in sub-Saharan Africa often necessitate training in another country
  - Domestic training less valued
- May augment retention in short-term
  - But increase emigration in long-term
- Mandatory service before training
  - May not be accepted
  - Delay production of specialists

Malawi

Zijlstra & Broadhead. Human Resources for Health. 2007:5:10
Cost-effectiveness analysis

- Normally used to compare clinical interventions or medications
  - 2nd analysis comparing different workforce policies
- Discrete-time inhomogeneous Markov process
  - Models movement of doctors over their working lifetime
- Outcome measures
  - Cost per doctor-year
  - Cost per specialist-year
- Baseline scenario
  - Cumulative impact on outcome measures under current workforce policies
- Interventions expanding specialty training
  - Different locations for training
  - Mandatory service period of 1 to 5 years
- Time horizon = working life of a Malawian doctor = 40 years
- Government perspective
- 3% discount applied to both costs and effects
- Probability sensitivity analysis using 2000 Monte Carlo simulations to calculate ICERs
- CEACs and CEAFs over range of thresholds (zero to MWK50 million (£60,000) in increments of MWK100,000)

Lagarde et al. Social Science and Medicine (2012), doi: 10.1016/j.socscimed.2012.05.005

Markov model

40 cohorts of doctors + existing stock
Policy interventions

Mandeville et al. Social Science and Medicine 2016 (online first)
**Distribution over 40 years**

- Expanded Malawian training would lead to a medical workforce over 50% greater than baseline by the end of 40 years
- Six times more specialists

**Costing policy options**

- In-service costs
  - Salary
  - Accommodation
  - Transport
  - Specialist perks
- Training costs
  - Tuition fees
  - Allowances

- Exclude increased service costs due to more specialist care
- Exclude administrative burden of policy implementation
Cost-effective acceptability frontiers

Current government thresholds =
- £6,536 per doctor-year
- £9,486 per specialist-year

Policy lessons

- Specialty training as an incentive to retain doctors would be cost-effective but more expensive than current expenditure
- More cost-effectiveness analysis of health workforce decisions
  - Malawi spent 4% of budget in 2014/15 on training and 36% on salaries
  - Costs and effects best evaluated over long-term
- Health workforce policies should take “whole-career” perspective to maximise investment
Questions?