

AMR – a view from health economics, and some research recommendations

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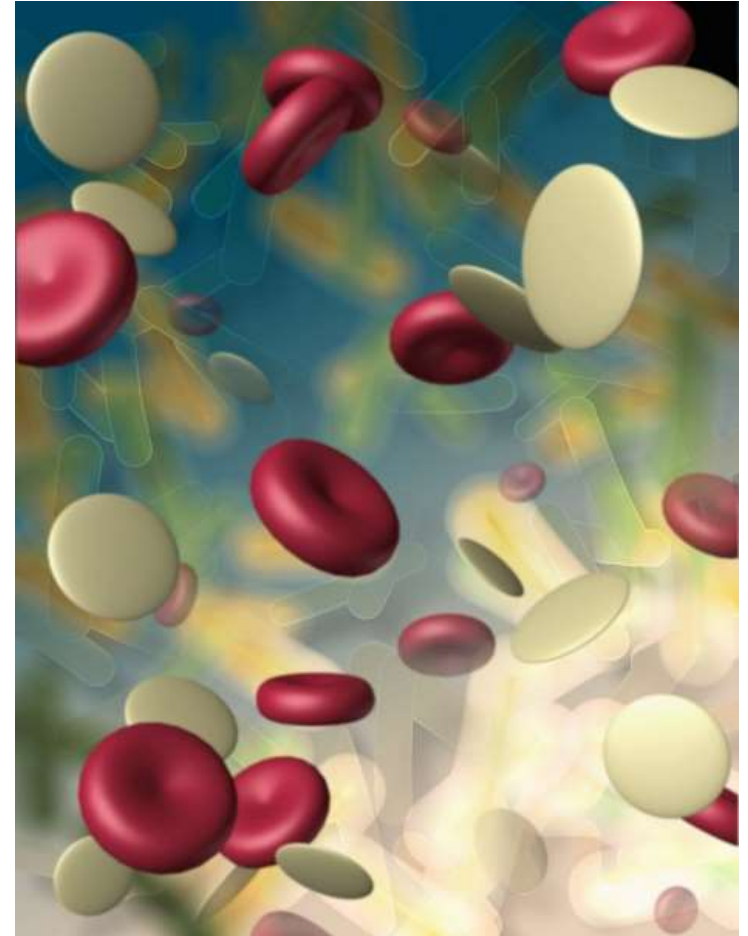
**Susceptibility to
antimicrobials is a scarce
resource...**

**... therefore we can use
economic thinking in
allocating this scarce
resource**

Outline

Three key issues:

- Costs of AMR
- Free-riding in AMR consumption
- Economic incentives & changing behaviour
- Research questions included
- WILL NOT DISCUSS MARKET FAILURE IN ANTIBIOTIC MARKETS...



Systematic under- representation of costs of AMR

AMR as a health care cost

- Costly:
 - Extra investigations/treatments
 - Longer hospital stay
 - Longer time off work
 - Greater likelihood of death



Problems with current estimates

- Generally based on cost associated with resistant infection compared to susceptible infection in one setting (e.g. hospital)
 - Ignore more general costs to other settings or society more generally
 - Ignores cost associated with newly emerging resistance
 - Ignores costs associated with changing activities as a result of emerging resistance
- Current estimates may provide false reassurance

What is needed

- Studies that consider future scenarios for different conditions with & without the availability of effective antibiotics
- Encompassing costs that relate to the possible loss of modern health care
 - Changes to joint replacement practice
 - Changes to cancer treatment
 - Changes to surgical practice
 - Etc.

In studies about choice of intervention

- For any evaluation where antimicrobial is involved in an intervention, costs of AMR are seldom, if ever, accounted for
 - Challenging!
- BUT means interventions using antimicrobials will look less costly than they are
 - Potentially leading to inefficient overuse
- Good estimates of costs of AMR needed so that they can be included in these studies

Research Recommendation 1

- To develop estimates of the costs of resistance linked to use of antimicrobials for use in all economic evaluation studies which include use of antimicrobials
 - Methodological issues
 - Issue of uncertainty – modelling under a number of scenarios required

Understanding free-riding in AMR consumption

For Society



- Taking antibiotics has positive consequences
 - Making the patient better
 - Reducing the risk of infection
- But also negative consequences
 - Increasing the development of resistance which long term has potentially catastrophic effects
- Balance between taking in some circumstances and not in others
- Appropriate perspective for policy decisions

For patients

- Taking antibiotics has positive consequences for patients
 - Making the patient better
 - Providing them with capability to function
- Possibility of some small negative side-effects
- But patients do not have to bear the costs of these
- On balance, take antibiotics even for small (tiny?) chances of improvement



Resistance as an externality



- Result is overuse of antibiotics compared to what is efficient (if people took account of true costs)
- Free-riding not just here & now, but in relation to future individuals (time preference) and globally
 - Reduced future resistance has very low present values, so even a very big future cost may not be “worth worrying about” today
- There is a CHOICE:
 - how much resistance to generate now, to enable us to have the desired level of susceptibility in the future

Research Recommendation 2

- To better understand societal preferences for the continuing existence of susceptible antimicrobials
 - To better understand the willingness of the population to trade between current health, future health, and the health of future generations in the context of AMR

Using economic incentives to change behaviour

Economics & policy solutions

- AMR is not taken into account in private decisions because the cost does not fall on the individual
- THEREFORE, alter costs/incentives so that this cost IS incurred
 - Taxes or charges
 - Other options such as permits or regulation

An example: taxes

- Could place tax on taking antimicrobials so that they are more expensive to use
- Likely to reduce use
 - How much, will depend on:
 1. How high the tax is
 2. How much money people have
 3. Whether there is an alternative & how much that costs
 4. Whether people see themselves as having a large or small need
 1. Personal dislike of being ill
 2. Personal views about risk
 3. Opportunity cost of being ill

Challenges with taxes

- Setting an appropriate tax level
 - Who pays?
 - Patient?
 - Doctor?
 - Demand likely to be inelastic
 - That is, people may not reduce consumption much in relation to price changes
 - Equity issues
 - Could disproportionately affect the worst off
 - Imperfect information
 - People may not make good decisions about their level of need
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Research Recommendation 3

- To further explore the possibilities for designing economic incentive mechanisms, including
 - **Taxes**
 - Rates? Who taxed? Equity implications
 - **Permits**
 - Minimising transaction costs, monitoring mechanisms
 - **Subsidies**
 - Rates, subsidies to who & for what – e.g. meeting targets, akin to pay for performance

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(Cannon, 1995)

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And the social scientists?