AMR presentation

Use of antibiotics:

- Antibiotics are very important in medicine and agriculture
- If we loose them, our ability to cure infectious diseases will seriously be constrained
- Problem: use more => more AMR

Situation: characteristics of the problem:

- global burden of infectious disease is distributed highly unevenly and low-income countries are disproportionately affected by AMR
    - justice
    - high-income countries will likely have to bear a much larger share of the response (developing new drugs, technologies, research)
- Corona: Exacerbation of traditional ethical challenges of infectious disease control (individual freedom vs collective interests
- There are no current or future persons who will **not** be affected by AMR: **shared vulnerability**
- Probably there is no sustainable solution since microorganisms can infinitely adapt themselves => vicious circle and problem that will stay for a long time

AMR challenges us in various fields

- Global health
- Food security
- Development, economics: big costs of disease, direct and indirect
- Ethics
- it is a complex multifaceted global challenge
- It is going to require a redistribution of resources and a balancing of benefits and burdens, which in turn forces us to make a number of individual and collective sacrifices—

Now I would like to discuss the specific ethical issues associated with AMR

Antimicrobial stewardship: reduce the amount of antibiotics used

- Technical measures:
    - Take measures in prescribing

    - Reduce wasteful use (i.e. against viruses)
    - Prevent infections
- Requires important value judgements:
    - Prioritization questions: health above everything else? Equal access? Individual autonomy vs collective interests
    - *When choosing which antibiotic to use, is the physician's main (or only) moral duty towards the patient's current need or toward potential future patients?*

- What kind of good are antibiotics? Public good?
    - Fish? CO2 emmissions?
    - Externalities of antibiotic use: taxes / licences
    - Is it a renewable resource? Probably not
- In which way do we define it as a policy problem?

Drug and diagnostic tool development

- Need highest in developing countries
- Technical know-how required for the production
- Who bears responsibility for the development of new drugs and tests
- How should those be made available
- obvious conflict between medical needs and the current pharmaceutical business model, this leads to the fact that we have barely had new antibiotics in the last years/decades
- we need alternative models:
    - health impact fund
    - patient benefit
- reasonableness of patent protection and high prices
- environmental impact and pollution caused by dumping by-products into wastewater, thereby affecting groundwater and contributing to the emergence of AMR
- *Who should have access to antibiotics? Anyone who can afford buying them while respecting intellectual property?*
- Chain of production is problematic

Ignorance and Behaviour Change

- The present state of awareness of the general public about the causes and severity of AMR remains quite poor
- Ignorance and laziness are getting inexcusable
- Should not neglect Individual responsibility: it seems a moral duty of persons at least in economically beneficial situations to:
    - Educating oneself about antibiotics
    - Question the Personal use
    - Consider the effects of the consumption of certain animal products
    - Align their travel behavior with mitigation goals
- How far should we go in motivating people to change behavior:
    - even coercive interventions?
    - *Nudging*

The Ethics of Agricultural and Farming Practices

- to half of the worldwide annual production of antibiotics is designated for non-human use
    - as treatment and prophylaxis in animals
- factory farming in its current form is only possible due to the widespread use of antibiotics
- reducing antibiotics will have substantial effects on farmers, many of whom will be unable to keep their production output at the same level
- concerns of fairness over the availability of affordable meat products
- *ban antibiotics in farming?*

The Ethics of Priority Setting and Resource Allocation

- making AMR a social, political and medical priority will likely mean diverting resources from other health and non-health concerns
- What should we mitigate with the given resources?
- Which pathogens should be targeted
    - tuberculosis vs nosocomial infections
- Who will benefit

- What are the opportunity costs
- global distribution of research outcomes
- rationing antibiotics:
    - when to limit new antimicrobials as drugs of last resort
- which basis for rationing:
    - cost-benefit analysis (costeffectiveness)
    - need, social value, equality of access
    - public deliberation?
- *if resistance to antibiotics of last resort is likely to emerge quicker the more equally we provide access to them, would this justify restricting access to those who need them most?*

Obligations to Future Generations

our current actions and policies will affect the microbial environment of current *and* future populations

future generations face a risk of being significantly worse off if bacterial infections can no longer be treated effectively

conflict: to preserve antibiotic effectiveness for the future might mean that we will have to significantly reduce our own use of antibiotics

place patients at some additional level of risk in order to preserve effective antibiotics: given risk for the present patient would be accepted for an uncertain positive effect in the future.

obligations we have to future people to preserve effective antibiotics