Challenges for a sustainable financial foundation for antimicrobial stewardship

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Abstract

Antimicrobial resistance is a worldwide threat and a problem with large clinical and economic impact. Antimicrobial Stewardship Programs are a solution to curb resistance development. A problem of resistance is a separation of actions and consequences, financial and clinical. Such a separation makes it difficult to create support among stakeholders leading to a lack of sense of responsibility. To counteract the resistance development it is important to perform diagnostics and know how to interpret the results. One should see diagnostics, therapy and resistance as one single process. Within this process all involved stakeholders need to work together on a more institutional level. We suggest therefore a solution: combining diagnostics and therapy into one single financial product. Such a product should act as an incentive to perform correct diagnostics. It also makes it easier to cover the costs of an antimicrobial stewardship program, which is often overlooked. Finally, such a product involves all stakeholders in the process and does not lay the costs at one stakeholder and the benefits elsewhere, solving the imbalance that is present nowadays.

Introduction

Antimicrobial resistance (AMR) is a worldwide threat and problem. Loss of effectiveness of antimicrobial therapy leads to untreatable infections and is causing already substantial loss of life. This is expected to grow even more in the near future. The economic impact is consequently also vast. A plan of action is thus needed and this should focus on all aspects of infection management as well as on public awareness and involvement of pharmaceutical industries, but also veterinary and agriculture industries; it requires thus a worldwide multi-sector response. With regards to hospitals, Antimicrobial Stewardship Programs (ASPs) are hailed as one the solutions to tackle the development of AMR. These programs focus on improvement of therapy by means of a set of diverse interventions. An important aspect is correct diagnostics, without diagnostics physicians are treating patients in fact blind. However, implementation of these programs in healthcare institutions is often a difficult and long process. One of the reasons for this difficult implementation might lie in the fact that provided funds are insufficient. We provide here an overview of the economic aspects with regards to ASPs and possible solutions from a financial point of view.

The misbalance of actions and consequences

One of the main problems of antimicrobial resistance is the fact that actions and consequences are separated from each other. Not just in time, but also in stakeholders. This makes it more difficult to implement actions and create support. In hospitals, clinical and financial effects from sub-optimally antimicrobial use and the consequent AMR often fall upon other departments or healthcare providers than the initiators of these problems (i.e. the prescribers). This creates a lack of sense of responsibility for these problems and is translated into the fact that diagnostics are often not performed according to guidelines and also antimicrobial therapy is often sub-optimally prescribed. The problems of these actions occur often on the long(er) term, are not directly visible, and others most likely bear the consequences. These consequences include patients with difficult to treat infections caused by resistant microorganisms. If such an infection occurs, the respective patient often already left the ward where therapy was given initially and in some cases even left the hospital. It therefore might well be another hospital that has to deal with this infected/colonized patient and all the extra measures and costs such as isolation and more expensive therapy. It also makes difficult to convince healthcare providers (or the prescribing department, depending on the cost structure) to spend money on the correct diagnostics and interpretation of these diagnostics (e.g. via an ASP), if it means that the benefits of those expenditures lie with other parties. It is therefore imperative to look at antimicrobial use in a more process-based manner, taking into account all stakeholders within the process. Firstly within one healthcare center, however it is also important to collaborate with neighboring healthcare centers and define a healthcare region. Preferably, all costs and benefits are shared among all stakeholders to remove the misbalance and create a more sustainable funding of both diagnostics and stewardship measures. It is the task of microbiologists, infectious disease specialists and pharmacists, to work together to achieve these goals crossing borders between treating specialties and between neighboring hospitals and setting aside possible conflicting issues. Only then, is it possible to create a sustainable financial solution for the prevention and management of antimicrobial resistance.

The macroeconomic point-of-view

In May 2016 the final report of the Review on Antimicrobial Resistance, led by Jim O’Neill, was published. This is one of the most important reports of the last couple of years, mainly because it addressed the problem from a worldwide, macroeconomic point-of-view. Often, the bigger picture is lost when focusing too much on single patients or institutions. Especially with a worldwide problem such as AMR and with such large economic consequences, it is important to look at the bigger picture. The report once more confirmed the dire situation that the world faces with regards to AMR. The financial impact will be huge, with worldwide costs adding up to billions per year, for a large part due to the loss of workforce of people infected with resistant and untreatable pathogens. Investments to counteract AMR and subsequent problems are expected to be dwarfed by the costs of doing nothing.

One of the main points addressed in the
The AMR Review suggests that governments should act upon this and contribute financially to perform better quality of care regarding antimicrobial use. This should ultimately suggest a new cost structure to reimburse diagnostics and to dissolve the financial misbalance and create a financial incentive to perform better quality of care regarding antimicrobial use. This should ultimately positively affect the development of AMR. Because of the wide impact of AMR, especially on an economical level, national governments should act upon this and contribute in the finances of new techniques and improved quality of care. The introduction of a package price for antimicrobial therapy and diagnostics is a solution that can answer these issues and should therefore be investigated further.

**References**


