Healthcare System İnefficiencies Related To Medicines: Any Potential Room For İmprovement?

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BACKGROUND

- Healthcare system efficiency is a key challenge for policy makers when countries have to ensure universal access and equity in patient access to health services while ensuring financial sustainability of their healthcare systems [1], [2].
- The imbalanced situation between increasing demand for access to better health services and healthcare products and budget constraints may challenge the sustainability of healthcare systems.
  - It has been suggested that a non-linear relationship exists between healthcare expenditure and health outcomes, and that similar level of healthcare expenditure does not necessarily translate to similar health outcomes, suggesting some room to improve efficiency in many countries [1], [2], [3].
- Healthcare efficiency related to medicine use is highly debated while ageing, growing prevalence of chronic diseases, and greater medicine use in times when development of more innovative and expensive products incur substantial burden on health insurance systems.

OBJECTIVE

- The objective of this study was to assess healthcare system inefficiencies related to medicines to identify where efficiency gains might be made.

METHODS

- A literature review was conducted at macro-economic level from World Health Organization (WHO), Organization for Economic Co-operation and Development (OECD), and European Commission official websites to identify key reports assessing healthcare inefficiencies related to medicines.
  - The search strategy consisted of the following free search terms: 'healthcare', 'inefficiency', 'Europe/European Union'.
  - The search was conducted in English language, limited to reports published between 2008 to December 2015.
  - This review was complemented by research for peer-reviewed articles on MEDLINE, additional internet searches using Google and Google Scholar, national health authorities' websites, available grey literature , as well as by interviews of European healthcare providers, patient groups representatives, HTA and payers' experts to illustrate the different categories of healthcare system inefficiencies.

RESULTS

- Health care system inefficiencies related to medicines can be classified in five categories:

1. Irrational use of medicines

Such as:

- Polypharmacy when the use of multiple medicines is not medically necessary
- Lack of treatment coordination (duplication of prescriptions)
- Non-conformance with prescribing guidelines
- Prescribing inefficiency with variation in the use of medicines between physicians and underuse of generic and biosimilar medicines
- Poor treatment adherence
- Off-label use of medicines
- Medicine wastage (e.g. vial wastage with inappropriate volume size or tablet wastage with inappropriate pack size)

(Figure 1)

Figure 1. Examples of irrational use of medicines

The WHO considers irrational use of medicines wasteful and harmful for both the individual and the population ; this can contribute to increase the risk of adverse drug events and lead to morbidity, hospitalisation and mortality [4].

Irrational use of antibiotics [5, 6]

- Overuse, inappropriate choice, poor adherence related to antimicrobials is a key public health issue leading to development of antimicrobial resistance causing about 25,000 deaths per year in the European Union and resulting in extra healthcare costs and productivity losses of at least €1.5 billion each year.

Poor treatment adherence

- An overview of adherence to long-term therapies conducted by the WHO in 2003 found around 50% adherence as the average rate in developed countries [7].
- Poor adherence has been estimated to cost about €125 billion annually to European governments and contributing to the premature deaths of nearly 200,000 Europeans annually [8].

Off-label use of medicines

- Off-label use of medicines in indications with little or no evidence supporting use, and when alternative approved effective therapies do not exist, is frequent and particularly high in some specific therapeutic areas and in certain patient groups (e.g. elderly and paediatric populations).
- E.g.in a position paper of the European Society for Medical Oncology (ESMO), off-label use of oncology medicines was estimated to reach approximately 50% (and even more) [9].

2. Inappropriate treatment options

- Decline in development of innovative approaches in some therapeutic areas (e.g. in mental health [10]).
- Current therapies not well tailored to meet the particular needs of different patient sub-groups, such as vulnerable patients *(e.g. pregnant woman, elderly patients, and paediatric population*) or patients requiring frequent dosing adjustments, which may lead to inadequate clinical practice to adjust available therapies to patient medical needs including off-label use.

3. Shortage of mature products

- Lack of financial attractiveness and ability to competitively supply the market, for example through single lot tenders, or lack of cost coverage to maintain the marketing authorisation and supplying of some older essential medicines, may result in in stock-outs or market withdrawals by manufacturers.

4. Geographical inequity in medicine access

- Disparities in medicine access are seen between European countries, and within countries, especially when pharmaceutical budgets are managed at regional levels.

5. Suboptimal framework in terms of HTA, as well as medicine pricing and reimbursement setting rules

- "Drug budget silo" mentality: some European countries tend to consider pharmaceutical assessments and reimbursement decisions in a silo [11].
  - ✓ It prevents from capturing any benefits such as transfer of cost-savings outside of the pharmaceutical expenditure budget.
- Impacts of treatments beyond health gains are currently poorly assessed for medicine reimbursement decision [12].
- HTA of medicines and devices or procedures are performed separately in some European countries.
  - ✓ It prevents HTA from fully capturing the benefit of using the medicine and device or procedure combined and can lead to patient access delays or even inconsistent decisions when processes are not coordinated.
- Some European countries implemented different HTA and medicine coverage procedures between medicine classes (e.g. orphan medicines, hospital-only medicines, generic medicines, etc).
  - ✓ It might lead to inefficient allocation of resources.
- European countries generally apply a single price across all indications.
  - ✓ It may either restrict access to the most cost-effective indications if the price is based on indications with the highest value, or disincentive companies from launching the medicine in indications with the lowest value, thus depriving society of the treatment needed to address an unmet need.

CONCLUSIONS

- These healthcare system inefficiencies deserve attention and should be addressed whenever possible by initiating dialogues between policy makers, patients, healthcare providers, payers and industry to enhance development of pharmaceuticals addressing unmet needs, efficient use of pharmaceuticals, thus supporting the sustainability of healthcare systems.

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