

Why utilisation of medicines is a public health interest

Utilisation of medicines exerts important effects on public health and health systems in different ways, including their pharmacological properties, their economic impact on health systems and their impact on the environment.

Medicines cause intended therapeutic effects.

Medicines are able to treat diseases, slow their progression or prevent their appearance as well as relieve symptoms. This is the reason why physicians prescribe, patients use and governments pay for medicines.

Some therapeutic classes of drugs represent important progress in medicine and have dramatically improved the therapeutic approach to several diseases. As an example antiulcer agents have changed a severe disease (with fatal complications), requiring gastric surgical resection, into a disease requiring only the consumption of few pills each day for a short period of time, with a substantial improvement in prognosis and quality of life for patients. Avoiding the surgical intervention of gastric resection, and all of its complications, has resulted in substantial gains for individual patients and public health as well as a substantial reduction in the costs of hospitalisation.

For other therapeutic classes the benefits are more limited, while the advantages of their use in everyday practice are less evident.

Medicines may cause medication errors and other medicine-related problems.

From the publication, in 1991, of The Harvard Medical Practice Study, one of the most comprehensive studies of medical errors, it clearly appeared that medicine related problems were the most common cause of adverse events (19%), more common than surgical infections (14%) or technical complications (13%). Moreover, most of the medicine related problems were linked to errors and were preventable.

These findings were confirmed some years later by the landmark IOM report *To Err is Human*, and medication errors (in both hospital care and primary care) are thought to be a leading cause of morbidity and mortality and, as a consequence, an important source of expenditure.

Medicines pose an economic burden and impose an opportunity cost.

Pharmaceutical expenditure accounts for a large proportion of health care spending and it is rising faster than any other area of health care.

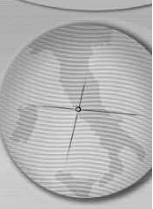
The European Union is one of the largest pharmaceutical world markets, with a total expenditure estimated to be more than €100 billion (2/3 paid by public health systems).

This large expenditure on pharmaceuticals poses an economic burden and imposes an opportunity cost: pharmaceutical expenditure accounts for a large proportion of health care spending and it is rising faster than any other area of health care. Thus we need we need to be sure that it constitutes good value.

The use of pharmaceuticals has an ecotoxicological impact.

Patients excrete medicines, unchanged or as metabolites, and these are released into the environment via the wastewater, often after treatment in sewage treatment works.

An increasing number of reports have found medicinal residues in the ground, waters (rivers and sea) and also in drinking water. The list of medicines found in the environment includes cardiovascular, neurologic, antineoplastic, antibiotics, antiasthma, non steroidal anti-inflammatory drugs and so on.



Medicines are specifically designed to be highly active and most of the medicines detected in the environment have carcinogenic or endocrine-disrupter properties. It is thus reasonable to assume that other animals in the environment will be influenced by exposure to these medicines and that chronic exposure of humans to sub-therapeutic concentrations of medicines could represent a risk, which needs to be evaluated.

For all of these reasons it is now time for a wider multidisciplinary approach, examining the impact of medicines utilisation on public health.

The European Commission DG-Health and Consumer Protection has recently funded several projects (EuroMedStat and PPRI, discussed elsewhere in this issue, and others) aimed at defining indicators, providing data and studying the pharmaceutical sector in the European Union. WHO has traditionally worked hard in this area, while the European Public Health Association (EUPHA) started-up a section on the utilisation of medicines in 2002.

In this issue of the Italian Journal of Public Health we aim to give an overview of the different problems and ongoing projects related to this field. And we hope that it will promote increased interest in this topic by a greater number of public health specialists.

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