Pharmacoeconomics: science, practice and challenges

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In most European countries the first wave of reform in hospital finance was the introduction of some form of hospital budgeting. This changed the environment of the hospital pharmacist, who assumed more responsibility for the efficient delivery of pharmaceuticals. As a consequence of the current trend towards more demand driven healthcare systems with further reliance on market mechanisms, a second wave of reform in hospital finance is taking place. This is the introduction of case payment systems, generally based on some adaptation of the diagnosis-related groups system (DRGs), established in 1983 as the basis for reimbursing providers in the US Medicare system. Apart from global budgeting, payment per case also encourages minimisation of the costs within a given treatment group but discourages treatment of those patients whose expected costs are higher than the reimbursement for the case. However, when quality is well monitored and sufficiently rewarded there is less chance of dumping resource intensive patients or "quality skimping". This may be realised in a market environment provided that the government assumes responsibility for guaranteeing the quality and safety of health care and promotes active participation of consumers who are interested in and well informed about good quality care.

Within case-based finance the hospital pharmacist is also expected to contribute to the provision of high quality care given the restraints of available resources for handling a case. Which pharmaceuticals should be part of the protocol for patient treatment and how can these be provided to the patient in a cost-effective way? This responsibility is, of course, shared with the medical specialist, but the role of the hospital pharmacist in deciding on pharmacotherapeutic strategies is becoming more prominent. No wonder there is a demand for new skills to meet this challenge. This has, for example, led to the incorporation of pharmacoeconomics in curricula of hospital pharmacist training programmes. Many now have a basic knowledge of the methodology of cost-effectiveness analysis and some have indeed become active as researchers in this area.

The responsibility of the hospital pharmacist is greater in those jurisdictions, like most social security systems, where there is a lack of a formal reimbursement approval system for hospital medicines. Often for outpatient drugs a list of medicines to be reimbursed exists. Such a list is centrally determined with explicit criteria for reimbursement and generally a formal process for adding medicines is in place. But to date few countries have actually started on the road towards a similar system for hospital drugs. Some now have temporary systems for the finance of very expensive hospital products which are separately reimbursed under specific conditions, often with some co-payment by the hospital. In the future the finance of these drugs will probably be integrated in the prospective payment per case.

As many new and very expensive products are being introduced, e.g. enzyme therapies or new oncology treatments like rituximab, trastuzumab and imatinib, a clash with the constraints of the hospital budget is imminent and management will turn to the hospital pharmacist for advice. In such a situation, the hospital pharmacist should be able to evaluate a product beyond its acquisition cost for the hospital. They not only have to search for the best evidence on efficacy and (cost) effectiveness, but should also be able to interpret the results of the underlying studies and implement them for the hospital.

Moreover, new rules for accountability and transparency in health care will require proof that the medicines actually deliver the benefits that have been promised, often on the basis of randomised controlled trials, which are carried out in selected patient populations and under specific conditions. This new area, also referred to as "outcomes research", sets new methodological challenges but also provides new opportunities for the hospital pharmacist, who is well placed to take the lead. Electronic patient records and the presence of both medical and pharmacological expertise in the hospital pharmacy create excellent conditions for correcting the different biases that emerge when trying to measure costs and benefits in actual practice. So more hospital pharmacists will enter the exciting area of health technology assessment, pharmacoeconomics and outcomes research and will add to the quality given their expertise and hospital environment.

In order to stimulate the interest in and help hospital pharmacists get acquainted with these new research areas *EJHP Practice* starts an educational series on pharmacoeconomics from this issue. Several well-known authors will introduce the principles and concepts, emphasising those which are most relevant to the work of the hospital pharmacist. Furthermore, other contributions will consider the changes in the environment of the hospital pharmacist and how these might impact on his or her work. And finally, a number of case studies will be presented that provide examples on how published studies can be interpreted and how the results may be adjusted and implemented in the local situation.

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