

the preparation of scientific publications, guidelines, lectures, workshops etc. At the present time the Russian professionals actively participate in international randomized clinical trials but the experience of pharmacoeconomic and outcome research is very limited. So in the nearest future it is important to organize adequate economic trials to show the advantages and the disadvantages of existing health-care interventions. The independence of investigators may be guaranteed by governmental funding of such trials though participation of the pharmaceutical industry seems to be more real in the present economic crisis.

PUP2**PHARMAEOECONOMIC INFORMATION IN FORMULARY DECISION-MAKING IN THE UNITED STATES**

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Previous research into the usefulness of cost-effectiveness information in managed care has had a narrow scope. This research has been limited to the level of importance that managed care directors place on pharmacoeconomic (PE) data, the types of studies that MCOs prefer to review and the future use of this type of information.

OBJECTIVES: The purpose of this study was to ascertain 1) the level of importance that PE information has on the speed of formulary approval, 2) the relationship between the cost of therapeutic agents and PE information, 3) the relationship between the time of market entry/number of competitor products and requirements for PE information, and 4) the importance of PE information by therapeutic classification.

METHODS: A telephone survey of 41 randomly selected pharmacy directors and medical directors was conducted to elicit their attitudes towards PE information.

RESULTS: PE information was somewhat/very important in influencing the speed of formulary pull-through in 51.2% of respondents. The majority of respondents felt that PE information was not important when drug acquisition cost was less than \$100; however, its importance increased as acquisition cost increased. Respondents felt that the time of market entry influenced the level that they placed on PE information. When there were no similar agents on formulary 73.1% felt that PE data was somewhat/very important, when there were ten similar agents on formulary 48.8% of respondents felt that PE information was somewhat not/not important. Respondents indicated that the therapeutic areas of depression, asthma, rheumatoid arthritis, pain control, and hypertension were areas where cost-effectiveness analysis would be most useful.

CONCLUSIONS: PE information is relevant to managed care decision-making and it is influenced by the drug acquisition cost, the number of competitor drugs on market and the therapeutic area under consideration.

PUP3**ANALYSIS OF THE ECONOMIC IMPACT OF AN INCREASE IN THE UTILIZATION OF GENERIC MEDICATIONS IN PORTUGAL**

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OBJECTIVE: The purpose of the study was to determine the potential savings to the Portuguese National Health System if the utilization of generic medications increased.

METHODS: The total sales of the 100 brand names with the highest sales to the Portuguese National Health System in 1997 were examined to determine which ones had a generic equivalent on the market. These were then substituted in four different scenarios where the substitution levels were 10%, 25%, 50%, and 100% and the total sales after substitution was calculated for each scenario. Finally, the potential savings were determined.

RESULTS: Of the 100 brand names with the highest sales to the Portuguese National Health System in 1997, 18 had generic equivalents on the market. When these were substituted at a 10% level, the estimated savings were 833.037.000 PTE (3.2%). When the substitution levels were 25%, the estimated savings were 2.082.592.000 PTE (8.0%). When the substitution level was 50%, the estimated savings were 4.165.185.000 PTE (16.0%). When the substitution level was 100%, the estimated savings were 8.330.370.000 PTE (32.0%).

CONCLUSION: Our pharmacoeconomic analysis demonstrated that the Portuguese National Health System can save a significant amount of its pharmacy budget by increasing the utilization of generic medications.

PUP4**IMPLEMENTATION OF PHARMAEOECONOMIC ANALYSIS IN NORWAY. ARE THE USERS PREPARED?**

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OBJECTIVE: The aim of this study was to study the present situation regarding perceptions, understanding and attitude towards pharmacoeconomics in Norway among employees within the pharmaceutical authorities and the pharmaceutical industry, prior to the introduction of pharmacoeconomic guidelines.

METHODS: Personal interviews of employees working with medicines on various levels were conducted, 47 from the authorities and 47 from the industry. The interview included questions regarding associations to various pharmacoeconomic expressions and questions about attitude towards within which areas that pharmacoeconomic analyses could be of use and the extent to which pharmacoeconomic analyses should be implemented. The quantitative data was handled in the statistical programme SPSS. Factor analysis was used to find correlation among some of the attitude questions.

RESULTS: Both those interviewed from the authorities and the industry had a reasonable understanding of most of the terms used within the pharmacoeconomic area and possible reasons for the actuality of pharmacoeconomics. However they seemed to lack some insight into the details involved. As for perceptions about the extent of use, the factor analysis showed that both the industry and the authorities were positive to the introduction of pharmacoeconomic analyses in relation to various decision-making processes. However, the authorities were significantly more positive than the industry to such use (*t* test for Equality of Means: $p < 0.001$ [equal variances not assumed]).

CONCLUSIONS: Those interviewed seemed to welcome a more extensive use of pharmacoeconomic analyses. Their level of perception and understanding of the subject is regarded as good, when acting as observers. However, if those interviewed are to get involved in decision-making on the basis of pharmacoeconomic analyses, these users need more training to gain more in-depth knowledge.

PUP5

ECONOMIC IMPACT OF PRESCRIBING IN THE URBAN COMMUNITY OF DELHI

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OBJECTIVES: The economic impact of prescribing was studied in urban community of Delhi.

METHODS: Information on drugs prescribed was collected from 4901 prescriptions from patients exiting 126 pharmacies. A systematic random sample of every tenth pharmacy in seven zones of Delhi was drawn. The ratio-

nality of prescription was categorized by an independent physician into the following categories: 1) Rational: if the drugs prescribed confirmed to the criteria of efficacy safety, cost, and convenience for the diagnosis/symptoms or if the drugs prescribed were thought to be efficacious enough to treat the underlying condition but were not the drug of first choice for the condition or the most cost-effective alternative. 2) Irrational: if the drugs prescribed were in no way beneficial to the patients management or if there was some negative pharmacokinetic or pharmacodynamic interaction or it was over prescribed, under prescribed or prescribed in wrong dosage schedule. 3) Difficult to comment: where prescription information in terms of diagnosis/symptoms complex was incomplete or where alternative herbal drugs were prescribed. The cost of rational drugs was deducted from the total cost of prescription.

RESULTS: It was found that one-third of prescriptions fell in the difficult to comment category. This classification of prescriptions is important to be described especially in a study in a third world country. The costs of rational drugs in commonest disorders, namely, acute respiratory infection, pyrexia of unknown origin and diarrhea were Rs. 43, 9, and 30 as compared to actual cost (i.e., Rs 59, 40, and 36, respectively [1 US \$ = approx. Rs. 40]). The use of commonest drugs, antibiotics were irrational in 56.6% cases. The private practitioners as compared to public sector facility doctors prescribed expensive antibiotics such as newer cephalosporins and quinolones more irrationally. On an average the specialists prescribed 2.34 drugs as compared to 2.08 by the general practitioners.

CONCLUSIONS: Irrational prescribing of drugs is common among the private practitioners in the urban settings in Delhi. Such practice needs to be curbed. There appears to be a great need for education and training of prescribers to minimize the irrational prescribing in developing countries for the benefit of the poor people.