returned a questionnaire whereas drug history was available for 175 of these patients. Sixty-seven percent (67%) of respondents were female, and 60% of all respondents had used cannabis before. The main indications for cannabis use were chronic pain (72.5%) and muscle cramp/stiffness (53.0%). Among the cannabis users, 42.0% suffered from multiple sclerosis and 11.0% were diagnosed with rheumatic diseases. The history of drug use showed a relatively frequent use of analgesics (36.6%) and psycholeptics (34.9%). Experiences with previous use of other cannabis products indicated that concomitant drug use could be decreased in 40.4% of the patients, remained the same in 48.6% and increased in 0.9%; in total 10.1% did not use any concomitant drugs. Most reported side effects of previous cannabis products were lethargy (42.5%) and dry mouth (38.1%).

CONCLUSIONS: The main indications for prescription of medicinal cannabis were chronic pain and muscle cramp/stiffness; multiple sclerosis was the most frequently reported disease. The majority of patients had used other cannabis products before, resulting in a decrease in concomitant drug use in a substantial number of patients. Legalization did not cause an excessive increase of cannabis used, most likely to be explained by the more expensive drugs in the pharmacy compared to coffee shops.

PHP18

INTRODUCING THE ‘FOURTH HURDLE’ IN THE NEW EUROPEAN UNION MEMBER STATES: THE CASE OF HUNGARY

Gulki L1, Bonec F2, Drummond ME3
1Budapest University of Economic Sciences and Public Administration, Budapest, Hungary; 2University of York, York, North Yorkshire, UK

OBJECTIVES: This paper outlines the current development of the “fourth hurdle” (i.e. requirement of effectiveness and cost-effectiveness data for drug coverage policy decisions) in one of the new European Union member states, describes the needs and effectiveness data for drug coverage policy decisions) in one of the “fourth hurdle” (i.e. requirement of effectiveness and cost-effectiveness data for drug coverage policy decisions) in one of the new European Union member states.

RESULTS: The “fourth hurdle” is very relevant to the new member states since many existing drugs are unevaluated and many new, expensive drugs are becoming available. On the other hand, the existing resources for health technology assessment, including economic evaluation, are quite limited.

CONCLUSIONS: The most important issue seems to be that the implementation of the “fourth hurdle” needs to be achieved in a way consistent with the limited resources for health economics analysis in the new member states. Specifically this means that, in setting priorities for drugs to be evaluated, additional criteria need to be applied. In particular, priority should be given to assessing drugs that have been evaluated in other countries, since this affords the opportunity to adapt existing studies or models to the situation of the new European Union member states.

PHP19

EFFECTS OF DEVOLUTION OF SUBSIDIES FOR PHARMACEUTICALS IN SWEDEN

Bergstrom G. Karlberg I
Goteborg University, Gothenburg, Sweden

OBJECTIVES: In this study, the effects of devolution of subsidies for pharmaceuticals from the state to the regional health authorities—counties—in Sweden were studied. The aim of the reform in 1998 was to cut the escalating costs associated with risk sharing mechanisms on a national level as well as the third party payer principles. METHODS: The documentation was studied and the history of development and the current opinions were analysed from interviews in nine counties, selected based on their method of devolution. RESULTS: Two main principles were found: either a population-based responsibility for costs; family medicine in primary care was responsible for costs of drugs classified as “basic” (80%) regardless of prescriber, in addition hospital departments were responsible for “special” drugs regardless of prescriber. The other model was a prescriber-based responsibility; each unit of care was responsible for costs of its own prescribing.

CONCLUSIONS: Incentives for cost containment are strongest in the prescriber-based models. Integration of drug costs in overall Health Care costs, service to patients and dialogue between providers are supported by the population-based models.
justified. CONCLUSIONS: Knowledge in pharmaco economics among pharmacists may lead to a deeper engagement of this group of professionals in a more appropriate management of drugs.

**PHP21**

QUALITY ASSESSMENT OF AN AMBULATORY CARE CLINIC BASED COLLABORATIVE CARE APPROACH FOR ACHIEVING THERAPEUTIC GOALS

Brown LM1, Isetts B2

1University of Tennessee, Memphis, TN, USA; 2University of Minnesota, Minneapolis, MN, USA

OBJECTIVES: The objectives of this study were to: 1) assess the quality of patient care provided by 6 Medication Therapy Management (MTM) pharmacists who were working collaboratively with physicians in 6 ambulatory care clinics in the Minneapolis, MN metropolitan area; and 2) determine the MTM pharmacists’ ability to identify and resolve drug therapy problems.

METHODS: The quality of therapeutic determinations made by pharmacists within this collaborative practice of MTM was studied using a 9-member panel of physicians (6) and pharmacists (3). The panel reviewed the care provided to nine randomly selected patient records from the 286 MTM patients who were Blue Cross/Blue Shield Blue Plus members. A structured implicit review process was used by the reviewers to specify their level of agreement with the therapeutic decisions made by the MTM pharmacists. The reviewers used a 7-point Likert scale to specify their level of agreement with each therapeutic decision.

RESULTS: There were 6444 therapeutic review determinations made by the review panel. The 9 reviewers expressed agreement with 90.7% of the decisions. They expressed disagreement with only 2.8% of the decisions. For each therapeutic decision, two-thirds or more of the reviewers agreed with the decision made in 99.9% of the cases. There was no difference in the mean ratings of the 9 patients based on an ANOVA (p = 0.906). Regarding drug therapy problems (DTP’s), there were 20 DTP’s identified during the initial patient visits. All but 5 DTP’s were resolved by the second visit. CONCLUSIONS: The decisions made by MTM practitioners working in collaboration with physicians are clinically credible based on the ratings and comments of a peer review panel. This study provides information on the quality of care provided by pharmacists in the collaborative practice of medication therapy management.

**PHP22**

MEDICATION AND SOCIO-ECONOMIC STATUS IN A POPULATION-BASED COHORT STUDY

Moebus S1, Dragano N2, Weyers S1

1Medical Faculty, University of Duisburg-Essen, Essen, Germany; 2University of Düsseldorf, Düsseldorf, Germany

OBJECTIVES: Presently, statements on associations of socioeconomic status (SES) and use of medication are based on few and contradictory empirical data. Within the framework of the ongoing Heinz Nixdorf Recall study (HNRS), we can examine medication use and SES in detail. METHODS: The HNRS is a population-based cohort study to assess the predictive value of new risk factors for coronary artery disease. A random sample of 4518 men and women aged 45–74 years was recruited from the German cities of Bochum, Essen, and Mülheim between 2000–2003. We assessed the seven-day prevalence of any medication-use from 4519 subjects. Age, gender, highest school degree, highest professional training and income served as determinants of medication prevalence. Logistic regressions were used to estimate multivariate associations. RESULTS: A total of 11,500 drugs were taken by 3449 (76%) subjects, with ACE-inhibitors (9%), beta-blockers (8%), sexual hormones (6%), and statins (5%) ranked first. As expected, the prevalence of drug use increased with age, women reported a higher use than men (83 vs. 70%). For participants with the lowest compared to participants with the highest professional training an odds ratio (OR) of 2.04 (95% CI: 1.60–2.60) for taking medication was calculated. Adjusted for age and gender, this significant difference between social classes disappeared. Otherwise, gender specific analyses showed an age-adjusted OR for women with the lowest educational level of 2.0 (1.31–3.05) compared to women with the highest educational level and for men a higher use of psychopharmacuetics in the lowest compared the highest income group (1.92; 1.02–5.05). CONCLUSIONS: The association of SES on drug use is still not clear and seems to alter with the construct of social status, gender and drug groups. In particular, the challenging task to differentiate between the influence capability of SES on medication, medication on health/disease and vice versa has to be considered.

**PHP23**

ANALYSIS OF CLINICAL INTERVENTION DOCUMENTATION BY PHARMACISTS

Steimle T, Meier K, Melzer S

LBK Hamburg, Hamburg, Germany

OBJECTIVES: At LBK Hamburg, pharmacists started 1995 with patient orientated drug distribution named PAT (Patientenbezogene Arzneimittel Versorgung). In 2004 nearly 1300 patients in 48 wards are served daily with the Unit Dose System. Every patient’s medication profile is recorded electronically. All medication orders are reviewed by pharmacists prior to delivering medication. In this way continuing pharmaceutical consultation is linked with the routine process of drug therapy. Medication errors and resulting costs have been reduced, acceptance of guidelines has increased. On the base of ex-ante controlling and pharmaco-economic consultation decreasing of costs should be reached. METHODS: On the base of the Problem-Intervention-Documentation-System (PI-Doc) of Humbold University, Berlin the system was developed specifically for hospitals. The goal was to analyse pharmaceutical interventions on medication errors and the rational use of drugs. For a period of two months all interventions were recorded by pharmacists. RESULTS: In the 2 months of the study 3010 interventions were recorded. A total of 2035 (67.6%) of the interventions are categorized as medication errors, including anamnesis and documentation errors and 975 (32.4%) of the recorded interventions are associated with optimization of drug therapy and cost-effective use of drugs. In this category, the main part was the successful adoption of the patients medication to the specific formulary of the hospital (24.5% (738)). Decreasing the number of special drug orders which are linked with extra process cost, the saved direct cost has been calculated. CONCLUSIONS: Pharmacists have a valuable role in preventing medication errors, improve patient care and cost-effective use of drugs. The analysis of pharmaceutical interventions highlights trends and patterns in prescription and medication errors. These results are to be used to improve effectiveness of pharmacists involvement in preventing medication errors and economic outcomes.

**PHP24**

ANALYSIS OF “INNOVATOR” DRUGS FINANCED BY SPANISH NATIONAL HEALTH SERVICE OVER THE PERIOD 1996–2003

Gaspar MD, Modamio P, Lastra CF, Mariño EL

University of Barcelona, Barcelona, Spain

OBJECTIVES: The Spanish National Health System (NHS) systematically introduces new and, obviously, higher-priced medi-