savings were 12,118,232BRL/year for the public health care system or 1,348BRL/year per 1,000 admissions. **CONCLUSIONS:** RCI has shown similar efficacy when compared to RCC with fewer costs. The cost difference was mild in magnitude but when extrapolated to a large-scale perspective these results reinforce the need of evidence-based decision making and rational resource allocation.

PHP52

HIGH AND INTENSIVE UTILIZERS IN HEALTH CARE—A STRATEGIC CHALLENGE FOR MEDICAL SUPPLY IN THE COMPULSORY HEALTH INSURANCE

Schoenermark MP[1], Beindorff N[2], Kielhorn H[1]
[1]Hannover Medical School, Hannover, Germany; [2]Schönermark.Kielhorn and Collegen, Hannover, Germany

OBJECTIVES: In Germany, the financing mechanism aggravates the cost issue of so called high-utilizers. So far, there were no care management concepts as the mostly multimorbid, complex medical conditions were judged as individual, non-influenceable cases. We developed a method to reveal issues in treatment and care of this special insurance population to increase efficiency. **METHODS:** The most critical challenge for insurance companies lies in the identification of relevant insured, in order to specifically target the high effort of control and management. In this project we analyzed the secondary data of the members of a German insurance company in the course of four years. Based on this we first differentiated high-utilizers from average-utilizers. In the following we deflected by which means existing care management concepts could be complemented. Based on the longterm data observation we developed a prognostic model to predict future high-utilizers. **RESULTS:** High-utilizers were defined as the 5% most expensive insurance-members, who generated 50% of total spending. We distinguished high-utilizers who caused the main costs in one specific care sector (pharmaceuticals and hospital) and patients who caused costs in multiple sectors (transsectoral). In addition, ultra high-utilizers were considered separately due to their extreme cost provocation. While it is possible to manage the first two groups by a combination or extension of existing cost reduction measures and care approaches such as disease management programs, ultra high-utilizers should be addressed by an individual and specifically developed case management. **CONCLUSIONS:** This segment of insured demands a stringent, integrated approach in order to efficiently employ the available financial resources. This study aims to explain a practical system for the controlling and management of expenses caused by high-utilizers based on our conclusion that the early identification and the specific management of high-utilizers in health care holds high financial potential and targeted programs are promising for care optimization.

PHP53

COST ANALYSIS OF ANKARA UNIVERSITY SCHOOL OF MEDICINE HOSPITALS

Esatoglu AE[1], Agirbas I[1], Doganay P[1], Goktas B[1], Akbulut Y[1], Ozatkan Y[2], Toruner M[2], Gok H[2], Atasoy KC[2], Ugurluoglu E[1], Cakir SU[2], Okten I[2]
[1]Ankara University Faculty of Health Sciences, Ankara, Turkey; [2]Ankara University Faculty of Medicine, Ankara, Turkey

OBJECTIVES: The purpose of this study was to determine the unit cost of the main production centers of Ankara University Faculty of Medicine Hospitals in 2008. **METHODS:** Expenses and costs of the two hospitals of Ankara University (Ibni Sina and Cebeci Hospitals) were obtained from the Hospital Information System and Revolving Fund distributed to the main production centers by using a step-down allocation method with five allocation steps. Unit costs were calculated in the last step. To determine the cost for outpatient and inpatient units, the data from the fifth allocation including the number of outpatients and inpatients as well as the number of inpatient days was used. **RESULTS:** The total cost of Ibni Sina Hospital (a 931-bed facility) and Cebeci Hospital (a 1153-bed facility) were calculated as €55,137,708.41 and €49,709,800.84 respectively. In Ibni Sina Hospital, among outpatient units, Dept. of Hematology had the highest, while the Aphaeresis Unit had the lowest cost. As to the inpatient unit costs, Dept. of Internal Diseases had the highest, and Dept. of Ear, Nose and Throat had the lowest cost. In Cebeci Hospital, Dept. of Algology had the highest outpatient unit cost, and Consultation-Liaison Psychiatry had the lowest outpatient unit cost. In terms of number of inpatients, Dept. of Pediatrics had the highest, while the Aphaeresis Unit had the lowest unit cost. Nuclear Medicine Department had the highest cost, while the Aphaeresis Unit had the lowest clinic unit cost with respect to inpatient hospital days. **CONCLUSIONS:** The results of this study show that the unit costs of outpatient clinics are higher in the departments of internal medicine compared to the departments of surgery whereas the reverse is true for inpatient clinics. Being aware of unit costs in a large-size hospital would improve strategic decision-making process including effective financial management, health care service planning and human resources management.

PHP54

BUDGET IMPACT OF ORPHAN DRUGS IN DENMARK COMPARED TO OTHER EUROPEAN COUNTRIES

Heemstra HE, Hensen M, Meijboom MJ
Pharmerit International, Rotterdam, The Netherlands

OBJECTIVES: Budget impact (BI) of orphan drugs (ODs) has increased over the past 10 years as more ODs entered the market since the introduction of the EU Regulation on Orphan Medicinal Products. The aim of this study is to determine the BI of ODs in a selection of countries where a large number of authorized ODs are reimbursed. **METHODS:** Public data on OD expenditure in Denmark was collected. The BI was calculated per product for the period 2005–2009. Subgroup analyses were performed for different types of treatment setting and ATC classes. The results of Denmark were compared to data collected for France (total OD costs for 2002–2009 specified per treatment setting) and for Belgium (budget estimates per product for 2008). **RESULTS:** Total BI of ODs in Denmark increased from 20.3M€ for 13 reimbursed ODs out of 22 (59%) authorized ODs in 2005 to €58.3M for 41 out of 60 (68%) authorized ODs in 2009. Highest costs were for oncology drugs (57%–67% of total BI in 2005–2009) and for metabolism drugs (19%–30% in 2005–2009). Outpatient drugs accounted for 0.01% (2005) to 1.55% (2009) of total BI of ODs. In France, 34 ODs were reimbursed in 2008 and the BI increased from €71M in 2002 to €496M in 2008. In 2008, the BI represented 1.8% of the total value of drugs sold. The situation in Belgium is comparable as the total BI of ODs was €66.2M in 2008 representing 2% of total reimbursed drug costs. **CONCLUSIONS:** Although cost per patient is relatively high, total BI for a country is still modest as a result of lower volumes used. The results show a consistent picture for OD expenditure across different health care systems. Budget restrictions are not widely used for ODs but this might change when the anticipated increase in BI of ODs becomes more apparent.

PHP55

INVESTIGATING THE IMPACT OF R&D INVESTMENT AND POLICY ON INNOVATIVE PERFORMANCE IN EUROPE

Trevor NC, Tang M, Samuels ER
Heron Evidence Development Ltd, London, UK

OBJECTIVES: At the 2000 Lisbon Summit, the European Council set the quantitative target to increase R&D investment in all EU countries to 3% GDP by 2010. Today, there is growing emphasis on innovation in R&D, particularly in the development of pharmaceuticals, with the European Innovation Scoreboard (EIS) publishing annual ranking of the 27 EU member states to track and benchmark innovation performance. This work aims to explore the potential relationship between R&D investment and EIS innovation performance. In addition, the impact of national or regional innovation plans/policy will be considered. **METHODS:** The EIS innovation performance results for 2009 (based on data from 2005) were identified as the primary measure of innovation performance. The EIS includes 7 dimensions to accommodate the diversity of innovation processes and models that occur in varying national contexts. Eurostat data were used to identify the R&D investment in 2005. In order to identify the importance of R&D investment (%GDP) to EIS position, a simple quantitative linear regression was conducted. Supplementary qualitative literature searches were conducted to identify national and regional innovation plans and policies. **RESULTS:** The simple linear regression revealed a significant ($P < 0.00005$) relationship between R&D investment and position within the EIS innovation performance, with R&D investment explaining 72% of the scoreboard results. However, other dimensions have a noteworthy effect on innovation performance, since although the UK was identified as an innovation leader (along with Denmark, Finland, Germany, and Sweden), the UK ranks only 8th in terms of %GDP R&D investment. In this case, the presence of a national plan for innovation, alongside other factors, has led to high innovative performance. **CONCLUSIONS:** Although R&D has a significant effect on innovation performance, other dimensions also have a noteworthy effect. For example, the presence of national plans for innovation may aid a country in gaining innovation leader status.

PHP56

SERVICES FOR WHICH PHARMACISTS MAY LEVY A FEE: PHARMACIST INITIATED THERAPY (PIT)

Truter I[1], Lubbe MS[2], Butler N[3], Nazer DP[4], Gous AG[5], Bayever DN[6], Naidoo P[7], Naidoo M[8], Tlala V[9], Putter S[10]
[1]Nelson Mandela Metropolitan University (NMMU), Port Elizabeth, Eastern Cape, South Africa; [2]North-West University, Potchefstroom, South Africa; [3]University of the Western Cape, Bellville, Western Cape, South Africa; [4]Tswane University of Technology, Pretoria, Gauteng, South Africa; [5]University of Limpopo, Medunsa, Limpopo, South Africa; [6]University of the Witwatersrand, Johannesburg, Gauteng, South Africa; [7]University of KwaZulu-Natal, Durban, KwaZulu-Natal, South Africa; [8]Rhodes University, Grahamstown, Eastern Cape, South Africa; [9]South African Pharmacy Council, Pretoria, Gauteng, South Africa; [10]Management Sciences for Health, Pretoria, Gauteng, South Africa

OBJECTIVES: The primary aim was to determine the extent of provision of Pharmacist Initiated Therapy (PIT) services in pharmacies in South Africa and the time it takes to provide this service. **METHODS:** A national research project was undertaken during 2008 by the South African Pharmacy Council on the services for which a pharmacist may levy a fee. The focus of this study is on one component of the larger study, namely the PIT service. **RESULTS:** A total of 369 pharmacies provided PIT services, and 3133 PIT services (cases) were measured. The majority were delivered by community (retail) pharmacies (95.79%). The PIT service was divided into three phases: Phase I (pre-administration procedure), Phase II (preparation and labelling of the prescribed medicine) and Phase III (provision of information and instructions to the patient to ensure the safe and effective use of medicine). Phase I was performed in 98.21% of cases, Phase II in 97.19% of cases and Phase III in 91.67% of cases. Pharmacists mostly delivered all three phases themselves (over 70% of cases). The weighted average time it took for a PIT service to be delivered was 199.02 seconds (just under 3.5 minutes) (SEM = 5.57 seconds). The weighted average time in community pharmacies was slightly less (192.82 seconds) compared to 312.15 seconds in private institutional pharmacies. The time taken was dependent on the number of items dispensed. The weighted average time taken was 160.76 seconds if there was 1 item dispensed, 220.31 seconds for more than 1 and equal to 2 items dispensed, and 327.19 seconds if more than 2 items were dispensed. a pharmacist may currently

charge a fee of R35.00 for this service. **CONCLUSIONS:** PIT is an important service that pharmacists deliver where the need exists. It is recommended that pharmacists be encouraged to counsel patients thoroughly when delivering a PIT service.

PHP57

AN ANALYSIS OF DRUG COST CONTAINMENT POLICY AT A HOSPITAL IN SOUTHERN THAILAND

Sae Wong AK, Kunthavaporn S, Junchareon N
Songkhla Hospital, Muang, Songkhla, Thailand

OBJECTIVES: To examine drug cost containment policy implemented at a hospital in southern Thailand. **METHODS:** This study was a retrospective, pre-post policy intervention descriptive design. During the fiscal years of 2005 and 2009, various drug cost containment strategies, including generic substitution for any drug group and a successful treatment guideline for orthopedic drugs, were adopted at a hospital in southern Thailand. Drug expenditures across those fiscal years were examined. The expenditure proportions between drugs listed and unlisted in National Essential Drug List were calculated. Cost-saving analysis of all generic substitution was conducted. Since the treatment guideline for orthopedic drugs was available in the hospital, their expenditures were also examined. **RESULTS:** Total drug expenditures had increased with decreasing rate across the study years. It increased by 47.15% from year 2005 to 2006, 43.19% from year 2006 to 2007, 21.17% from year 2007 to 2008 and 2.17% from year 2008 to 2009. The expenditures of essential drugs in the National Drug List were accounted for 61.64%, 56.62%, 54.38%, 48.67% and 50.94% across those study periods, respectively. Results showed that generic drug substitution policy reduced overall drug expenditures by 34.33%, or 7.66 million baths from year 2008. In 2009, only 11 items of generic drug substitution for branded-name drugs could reduce drug expenditures by 13.33%, or 4.73 million bahts which reflected annual cost-saving about 25.95 million bahts. In the same year, a result showed that the implementation of orthopedic drug guideline reduced drug expenditures by 5.53% or 2.10 million bahts. **CONCLUSIONS:** The study indicated that treatment guideline and generic drug substitution policies could control relatively high amount of drug expenditures at a hospital in southern Thailand. Hospital administrators should consider to continue these policies.

PHP58

ANNUAL HEALTH INSURANCE REIMBURSEMENT OF DENTAL CARE IN HUNGARY

Marada G[1], Nagy Á[1], Sebestyén A[2], Benke B[1], Kriszbacher I[1], Boncz I[1]
[1]University of Pécs, Pécs, Hungary; [2]National Health Insurance Fund Administration, Pécs, Hungary

OBJECTIVES: The aim of this study was to asess the annual health insurance reimbursement of of dental health service in Hungary. **METHODS:** The assessment base of the study was the annual reports of National Health Insurance Fund Administration (OEP). Only the data collected from the services in conctractual relationship with the OEP and delivered in 2008 were evaluated. Dental care services are organised in different levels: general dental service, specialist dental care, special dental care on university level and inpatient departments. Our study covers primary, outpatient and hospital dental care. **RESULTS:** Dental care was supplied by 3378 general and specialist dental care services until the end of 2008. For the hospital treatment of more serious cases 17 inpatient department is available with 154 patient beds. Within the period of examination (2008) 7.6 million cases or rather 23.6 million interventions were carried out. The health insurance expenditures of the OEP for outpatient dental care was 23.9 billion forints (€85,18 million). The total health insurance reimbursement of dental care (including primary, outpatient and hospital care) was 24.92 billion Hungarian forints (€88.82 million) in 2008. **CONCLUSIONS:** The health insurance reimbursement of dental care services in Hungary is approximately 2% of the total health insurance expenditure of OEP.

PHP59

EVOLUTION OF PUBLIC EXPENDITURE WITH PHARMACEUTICAL CARE IN BRAZIL DURING THE PERIOD 2005–2008

Aurea AP, Garcia LP, de Magalhaes LCG, de Almeida RF, dos Santos CF
Institute for Applied Economic Research, Brasilia, DF, Brazil

OBJECTIVES: There is a known concern of health researchers and public managers in Brazil with the population's access to medicines. We quantified the public expenditure on medicines in Brazil, during the period of 2005 to 2008. **METHODS:** The expenditure on medicines comes from a data warehouse of the Ministry of Planning, Budget and Management that stores the information concerning any purchase made by the Brazilian Federal Government. We also computed the amounts transferred to official laboratories to produce medicines. Information on the states, Federal District and municipalities came from the Information System on Public Health Budget (SIOPS). **RESULTS:** In the period 2005 to 2008, the public spending with drugs rose from US$ 1.8 billion to US$ 2.0 billion in real terms, with an average annual growth equivalent to 3%. The average spending in this period was US$ 1.8 billion. Most of the spending on medicines is attributed to the Federal Government, with values exceeding US$ 835 million per year. Just under half of the expenditure is given to states and municipalities. Considering only the federal spending, the "strategic component" represents the largest share, with participation from 56%–64% in the period. This result is expected, since the Ministry of Health is responsible for funding all the medicines from the "strategic component" of pharmaceutical care which includes, among others, the antiretroviral drugs and blood products. The amounts of transfers to official laboratories ranged between 20–25% of drug costs. **CONCLUSIONS:** The expenditure for those pharmaceutical care programs whose purchases are centralized at the federal Ministry of Health, didn't show a significant increase in the period of 2005–2008. Rather, the evidence suggests relative stability of procurement of medicines from pharmaceutical care programs under the Federal Government's responsibility in this period.

PHP60

HEALTH INSURANCE SUBSIDY OF SPA TREATMENT IN HUNGARY

Domján P[1], Zsigmond E[1], Ágoston I[2], Boncz I[2]
[1]University of Pécs, Zalaegerszeg, Hungary; [2]University of Pécs, Pécs, Hungary

OBJECTIVES: The aim of our study is to calculate the average health insurance reimbursement of spa treatment according to counties in Hungary. **METHODS:** Data were derived from the Hungarian National Health Insurance Fund Administration (OEP) and covers the fiscal year of 2007. These data was analyzed in the light of different value of its average point. The Hungarian spa financing method is based on relative system, which is depending on the treatment's price. We calculated the average health insurance subsidy per of spa treatment (HIS/STN) as an indicator of average health insurance reimbursement of a single spa treatment. **RESULTS:** In 2007 the number of spa treatment was 8,160,438 and the full treatment expenditure of subsidy was 4.34 billion HUF (US$25,632 million). The average value of (HIS/STN) was 540,000 HUF (US$3124). Two outlier points are the region of North Hungarian Plan (different from average HIS/STN value was –6.76%) and region of North Transdanubia (different from average HIS/STN value was 12.47%). The other regions performed similar outcomes ratio between 1.33% and 2.95%. **CONCLUSIONS:** The main cause of the two outlier regions is the inadequat structure of Spa services. Less people visit to North Transdanubian Region, because the number of spa facilities isn't significant, but these thermal baths are significant, which price is higher. The North Hungarian Plan attracts a lot of patients with lower price. The result if the price is lower, the subsidy will be lower because of the financing system is based on relative method.

PHP61

MARKET ACCESS AGREEMENTS IN EUROPE: TYPOLOGY AND RATIONALE

Toumi M[1], Jaroslawski S[2], Lamure M[3]
[1]University Claude Bernard Lyon 1, Rhone Alpes, France; [2]Creativ Ceutical, Paris, Ile de France, France; [3]University Claude Bernard Lyon 2, Rhone Alpes, France

OBJECTIVES: Achieving Market Access for new products has become complex for pharmaceutical companies. Faced with growing expenditure, health care authorities accept or propose various Market Access Agreements (MAA) (risk-sharing/performance-based/commercial schemes) but often with little experience and knowledge. We performed in-depth analysis of their design and we formulate recommendations to stakeholders. **METHODS:** MAA is a formalized compromise between payers and industry to achieve: Price and Reimbursement, HTA recommendation and Formulary listing. We reviewed published and grey literature from major health insurers in France, Italy, Germany and UK. We conceptualize MAA typology according to the nature of uncertainty perceived by stakeholders and their motivations. **RESULTS:** We identified above 30 MAAs and classified them as follows: 1) Value for money not questioned: a) Conditional Market Access Agreement: Evidence development agreement→Aim: address actual uncertainty; b) Health Outcome Boostering Agreement: Disease Management Initiative→Aim: improve competitive advantage; 2) Value for money questioned: a) Cost Containment Agreement: Basic commercial agreement→Aim: reduce/control drug bill; b) Health Outcomes Agreement: Value based agreement→Aim: link payment to performance. Motivations of public payers: Main: Buy health production; Other: Control expenditure; Improve ICER of expensive products; Prevent media coverage of negative decision; Provide patient access; Expand benefits basket. Motivations of the industry: Main: Achieve Market Access for a product at high price in all markets; Other: Mitigate development failure; Reassure share holders; Improve company publicity; Fulfil requirements of authorities. In UK the design of MAA was a direct consequence of formalized HTA, in Italy there was no apperent rationale. **CONCLUSIONS:** Commonly used nomenclature needs to be revisited. Applying our typology framework should allow health care payers and the industry to design and implement MAAs rationally and with transparence. MAAs in UK are a direct repercussion of a not favorable primary HTA.

PHP62

VALUE OF CONGRESS ABSTRACTS OF COST-EFFECTIVENESS STUDIES FOR DECISION MAKERS

Karray S[1], Jaroslawski S[1], Dzbek J[2], Altin S[3], Gerber A[3], Toumi M[4]
[1]Creativ Ceutical, Paris, Ile de France, France; [2]Jagiellonian University, Kraków, Małopolskie, Poland; [3]Institute for Quality and Efficiency in Health Care (IQWiG), Cologne, Germany; [4]University of Lyon, Lyon, France

OBJECTIVES: ISPOR, iHEA, and HTAi regularly organize congresses in the field of health economics. Given the number of abstracts accepted each year it is crucial to assess their credibility and how results of cost-effectiveness analyses differ across meetings. **METHODS:** We collected all abstracts published 2007–2009 at ISPOR (International and Europe), HTAi and iHEA meetings. Abstracts on cost comparison, cost of treatment, cost benefit, cost consequences, cost-effectiveness, cost minimization and cost utility analyses were reviewed in depth according to a reading grid which allowed extraction of essential information that could enable evidence-based decision-making in health policy. This included e.g. availability of key methodological parameters, involvement of the industry in authorship and details of conclusions. **RESULTS:** We analyzed 5488 abstracts from ISPOR, 1410 from HTAi and 1969 from iHEA. Our preliminary