 savings were 12,118,232 BRl/year for the public health care system and 1,348 BRl/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.

**PHPS2**

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

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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 longitudinal data observation we developed a prognostic model to predict future high-utilizers. RESULTS: High-utilizers were defined as the 5% most expensive insured 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, bar strategies 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 identfication and the specific management of high-utilizers in health care holds high financial potential and targeted programs are promising for care optimization.

**PHPS3**

**COST ANALYSIS OF ANKARA UNIVERSITY SCHOOL OF MEDICINE HOSPITALS**

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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 four 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 Aphsir Unit had the lowest cost. As to the inpatient units costs, Dept. of Internal Diseases had the highest, and Dept. of Ear, Nose and Throat had the lowest cost. In Cebeci Hospital, Dept. of Allogiology 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 Aphsir Unit had the lowest unit cost. Nuclear Medicine Department had the highest cost, while the Aphsir 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 discharge members. Being aware of unit costs in a large-size hospital would help to improve strategic decision-making process including effective financial management, health care service planning and human resources management.

**PHPS4**

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

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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 treatment setting) and for Belgium (budget estimates per product for 2008). RESULTS: Total BI of ODs in Denmark increased from 20.9M for 13 reimbursed ODs (22% of reimbursement in 2009) to 41.04M for 26 ODs (32% (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 €946M 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 of therapy was 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.

**PHPS5**

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

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OBJECTIVES: At the 2000 Lisbon Summit, the European Council set the quantitative target to increase R&D investments in all EU countries to 2.5% of GDP by 2010. Meanwhile, there is growing emphasis on innovation in R&D, particularly in the development of pharmaceuticals, with the European Innovation Scoreboard (EIS) publishing annual rankings of the 27 EU member states to track and benchmark innovation performance. The thematic link aims to explore the potential relationship between R&D and 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 a variety of indicators across 3 domains 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 boardscore 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.

**PHPS6**

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

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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 313 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 98.67% 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 = 5.37 seconds). The weighted average time in community pharmacies was slightly higher at 202.05 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...