guidelines, health prevention / monitoring strategies, involving coordinated actions between primary care and pharmacies, are valuable resources to consider.

PCV150

A REVIEW OF THE APPLICATION OF INTERNATIONAL REFERENCE PRICING IN UKRAINE'S PILOT HYPERTENSION REIMBURSEMENT SCHEME

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OBJECTIVES: The Ukrainian government has been considering ways to improve the population's access to medicines by offering limited reimbursement access. For this purpose, the government has expressed its interest in implementing International reference pricing (IRP). The pilot hypertension programme, which introduced a system of IRP for certain hypertension drugs, was introduced in mid-2012. The government is currently looking to revise the pricing and reimbursement mechanism and to expand the list of drugs eligible for reimbursement under the scheme. This study examines the pilot hypertension programme and its impact in terms of achieving its objectives so far. **METHODS:** Secondary research focused on analysing the current pharmaceutical market and health care situation in Ukraine, with a specific focus on the hypertension market. The study then assessed the pricing and reimbursement methodology which is currently in place, the programme's objectives, and its impact on volume and value of the antihypertensives market. **RESULTS:** Hypertension was chosen for the pilot programme due to the high prevalence of the condition in the country. While, for the full year 2012, the weighted average cost per package in the antihypertensive drug segment decreased by 1.4% compared to the previous year, the volume of retail sales increased 16.8%. Furthermore, as of January 2013, the prices of these drugs had been falling every month from July till December 2012 compared to the corresponding months of 2011. **CONCLUSIONS:** With the pilot hypertension programme, the government is hoping to lower drug prices and thereby improve affordability. Considering that the pilot scheme could be followed by programmes in other therapeutic areas, including a government proposal to include IRP for insulin treatments, the structure and effectiveness of the hypertension programme, and the subsequent amendments to it, could substantially impact the development of any other potential programmes in the future.

PCV151

HOW COMPLEX IS THE COMPETITION IN REGULATED PHARMACEUTICAL MARKETS?

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OBJECTIVES: This paper constitutes an attempt at investigating processes of dynamic competition in pharmaceuticals, with reference to the nature and intensity of price competition in relation to patent expiry and different regulatory regimes. The paper uses comprehensive data on a selection of in-patent and off-patent (generic) cardiovascular medicines from IMS from the five largest European pharmaceutical markets - UK, Germany, France, Italy, Spain - to analyze the impact that pricing and reimbursement regulation and product differentiation have on market structure, diffusion and prices. **METHODS:** The paper develops a panel data model to explain the determinants of brand-name prices and generic prices both before and after patent expiry, the impact of generic entry and generic penetration on market share and prices of brand-name drugs, the competition patterns in their off-patent sector, the determinants of generic diffusion in the presence of generic competition, and the relationship between originator branded and generic prices under different regulatory regimes. The structure of the data allows these questions to be explored at molecule level and at product level. At all levels the originator and generic markets are observable. **RESULTS:** Despite the proliferation of generic policies in many countries, prices in the off-patent sector do not decline as fast as originally thought. Entry into the generic market is positively influenced by regulation through reference pricing and opportunities for product differentiation. Elements of product differentiation within generics promote diffusion, but do not reduce prices. And, health insurance does not capitalize fully on the cost advantage of generic medicines. **CONCLUSIONS:** The results suggest that the relationships between the dynamics of original drug prices, patent expiry, and generic competition are complex and differentiated across countries. The level of generic penetration remains low in some of them and a sharp contrast exists between countries.

PCV152

PRESCRIPTION PATTERNS OF ANTIHYPERTENSIVE AGENTS IN T2DM PATIENTS VISITING TERTIARY CARE CENTRE IN NORTH INDIA

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OBJECTIVES: Hypertension management is of a paramount importance in diabetic patients for cardiovascular risk reduction. Hence, we evaluated prescribing pattern of antihypertensive in T2DM (type 2 diabetes) patients and compare with existing recent guidelines. **METHODS:** A cross-sectional study involving evaluation of all T2DM patients referred to endocrinology unit at tertiary care centre for hypertension, comorbid complications, and recording prescription. Utilization of 5 different antihypertensive drug classes was compared for all patients receiving 1, 2, 3, 4, or more drugs. Logistical regression was used to assess likelihood of prescription of drugs and/or therapy for specific conditions mentioned in the guidelines. **RESULTS:** Out of 1358, T2DM enrolled patients 1186 (87%) had hypertension (males 52%, females 48%). The median duration (IQ) of hypertension diabetics was 4 (1-10) years. A total of 25% patients had controlled BP and 75% with uncontrolled blood pressure (13% isolated systolic hypertension, 6% isolated diastolic hypertension, and 55% both elevated). Overall, ACE inhibitors (ACEIs) were prescribed the highest (59%) followed by angiotensin receptor blockers (ARBs) (52%), calcium channel blockers (CCBs) (29%), diuretics (27%), and beta-blockers (14%). Overall, 55% of T2DM patients were on polytherapy, 41% on monotherapy, and 4% had no antihypertensive treatment. Polytherapy was more predominant with age, duration of diabetes, duration of hypertension, and comorbid complications. **CONCLUSIONS:** Although prescribing pattern of antihypertensive showed adherence to existing evidence-based guidelines, higher proportion of uncontrolled hypertensive patients was found.

PCV153

INITIAL ANTICOAGULATION THERAPY IN PATIENTS WITH VENOUS THROMBOEMBOLISM AND IMPAIRED RENAL FUNCTION: RESULTS OF AN OBSERVATIONAL STUDY

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OBJECTIVES: Patients undergoing initial therapeutic anticoagulation after a venous thromboembolic event (VTE) with severely impaired renal function (RI-VTE-patients) are at high risk of accumulating the anticoagulants resulting in an increased risk of bleeding events. Current guidelines/approved summary of product characteristics (SPC) recommend usage of specific anticoagulants only, monitoring of aXa-activity, and/or dose-adjustment (in the case of enoxaparin) for initial therapeutic anticoagulation of RI-VTE-patients. This study investigates the treatment of German RI-VTE-patients and evaluates whether guideline/SPC recommendations are implemented in the practice of real life care. **METHODS:** We conducted a chart review in 5 German hospitals. All VTE patients treated in these hospitals from 01/01/2007-31/12/2011 were included. RI was defined as CrCl<30ml/min. Treatment did not conform to the recommendations in guidelines/SPCs, if: a) A drug was used that is contraindicated according to the SPC; b) The recorded daily dose of enoxaparin was higher than the recommended weight-adjusted dose. **RESULTS:** Of 5,263 VTE patients identified, 709 (13.5%) cases could not be documented due to missing charts (601) or no documented creatinine serum levels (108). Of the remaining 4,554 patients (mean age ±SD 67.4 years ±15.7; 53.0% female; weight 80.2 kg ±20.0; 54.5% deep VT), 337 (7.4%) had a mean estimated GFR<30ml/min; additionally 1,630 (35.8%) had a minimum eGFR<60ml/min. In 19 (5.6%) of these cases, patients were treated with a drug not recommended for use, 21 (6.2%) did not receive any initial anticoagulation treatment and 91 (27.0%) received a higher than recommended dosage of enoxaparin. Additionally, for 22 patients (6.5%) receiving enoxaparin, no weight information was recorded and it is therefore unlikely that the dosage was adjusted correctly. **CONCLUSIONS:** VTE treatment in RI-VTE-patients differs remarkably from labelled recommendations; over-dosage of enoxaparin is common. It seems fair to assume that these patients are facing a higher risk of adverse reactions in particular bleeding events.

PCV154

ATTITUDES OF PHYSICIANS TOWARD IMPLEMENTING SHARED MEDICAL APPOINTMENTS AT NATIONAL GUARD FAMILY MEDICINE CENTERS IN RIYADH

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OBJECTIVES: To determine the attitude of physicians in three family medicine centers (FMCs) at the National Guard Health Affairs (NGHA) toward the implementation of the Shared Medical Appointment (SMA) approach compared to the current individual appointment approach. **METHODS:** A cross-sectional survey study was conducted by distributing a structured questionnaire among the 79 FMCs' physicians at NGHA in Riyadh, Saudi Arabia. The first part of the questionnaire was an introduction, the second part has requested socio-demographic information, and the third part consisted of 12 statements measuring physicians' attitude toward implementing SMA and the current individual appointment approach. Responses were measured using 5-points Likert Scale. Seventy-nine self-administered questionnaires were distributed to physicians' mail-boxes and the completed questionnaires were collected from mail-boxes at each clinic. Data collection was done from December 10 to 15, 2011. Data were entered and analyzed by the Statistical Package for Social Science (SPSS.16). Descriptive analysis was conducted using frequencies, percentages, and mean (SD). Inferential analysis was conducted using one way ANOVA and Mann-Whitney tests to detect statistically significant differences in responses. A significance level of 0.05 was used. The validity and reliability of the instrument was measured using Pearson's correlation and Cronbach's Alpha, respectively. **RESULTS:** A totla of 78 valid questionnaires were returned yielding a response rate of 99 %. The average attitude scores were 3.75 toward the SMA approach and 2.98 toward the current Individual Appointment approach. The average attitude scores were significantly different at all dimensions (Mann Whtiney P-value < 0.001) in favor of SMA except for patient privacy which was in favor of current individual appointment approach. Subgroup analysis by socio-demographic variables indicated that males and Saudi national physicians have higher positive attitude toward SMA. **CONCLUSIONS:** There is positive attitude of all physicians toward SMA compared to the current individual appointment approach. This attitude was affected by gender and nationality.

PCV155

ANALYSIS OF RE-HOSPITALISATIONS FOR STROKE AND TRANSIENT ISCHEMIA RECURRENCE AND ASSOCIATED COSTS IN THE BURGUNDY REGION IN FRANCE

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OBJECTIVES: To assess the re-hospitalisations rates for stroke (ST) and transient ischemia (TI) recurrences as well as related inpatient costs through the French national Hospitals Medical Health Information database (PMSI). **METHODS:** A retrospective hospital administrative-claims analysis was carried out based on the Diagnoses Related Groups (DRG)-data of four hospitals within the Burgundy region along the 2006-2011 period. In each of the four hospitals, three cohorts were followed up over two years. Patients were excluded if any related hospitalisation for ST or TI occurred in the preceding two-years (identification through ICD-10 diagnosis codes). One and two-year re-hospitalisations rates for ST and/or IT were calculated.

Re-hospitalisations were taken into account if they occurred after one month following inclusion and regardless of the location of the hospital at the national level. Alternatively, 'all' re-hospitalisations rates regardless the related diagnosis were also assessed. Inpatient costs were valued based on reference tariffs according to French National Social Health Payer perspective. **RESULTS:** Around 1750 patients were followed per cohort across the four hospitals starting from 2009, 2010 and 2011. One-year re-hospitalisations rates for ST and TI ranged from 2.9% to 7.1%. The median time to re-hospitalisation ranged between 1.5 to 9.3 months. Two-year re-hospitalisations rates for ST and TI ranged from 4.5% to 10.4%. Two-year re-hospitalisations rates regardless of related diagnosis in acute and/or rehabilitative settings ranged between 45.5% to 65.1%. Mean costs (+/-SD) per inpatient stay for ST and TI were 4'645€ (+/-3'821) in acute setting (2013 EUR). When excluding TI, mean costs were 5'293€ +/-4'225€. Hospitalization costs varied depending on sub-type of stroke, severity, co-morbidities and also year of costing. **CONCLUSIONS:** Such short term data on recurrence rates and inpatient costs might be useful when estimating potential benefits of any secondary prevention intervention aiming at reducing stroke relapses.

PCV156

STATINS IN CANADA: THE CASE FOR DISINVESTMENT

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OBJECTIVES: We examined the economic consequences of generic switching within the statin market for public plans in Canada between 2000 and 2012. **METHODS:** We extracted data (number of units, costs, and claims) for all statins reimbursed by Canadian public drug plans for the period 2000-2012 (sources: IMS Brogan and Canadian Institute for Health Information). **RESULTS:** Public plans paid $11.2 BN to reimburse statins for 2 MM patients between 2000 and 2012. The annual cost of reimbursing statins peaked at $1.3 BN in 2009. Generic atorvastatin was listed by public plans in 2010, and the proportion of statin reimbursement attributable to generics increased from 18% in 2009 to 75% in 2012, reflecting a 76% increase in generic switching. During the same period, the unit cost of brands and generics fell by 25% and 49%, respectively. The combined effect of increased generic switching and lower unit costs resulted in a 55% decrease in the total cost of statins, from $1.3 BN in 2009 to $582 MM in 2012. Annual savings attributable to generic switching increased 10-fold between 2000 and 2012, from $7 to $709 MM. The efficiency at which potential savings has been captured through generic switching increased from 8% to 74% from 2000 to 2012; we project that this will generate savings of ~$800 MM annually through 2015. Increasing generic switching to 100% could generate up to an average of $135 MM annually in additional savings **CONCLUSIONS:** Although substantial savings have been generated by generic switching within the statin class, increasing generic switching could generate additional savings. One strategy to capture these additional savings would be disinvestment: if branded statins were de-listed from public plans if a generic version were available, this would increase generic switching, increase the efficiency at which potential savings are captured, and increase total savings.

PCV157

ATRIAL FIBRILLATION'S BURDEN OF DISEASE IN PORTUGAL

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OBJECTIVES: To estimate the Disability Adjusted Life-Years (DALY) attributable to Atrial Fibrillation (AF) during 2010 in Portugal, including both AF and AF related stroke. **METHODS:** The analysis requires two types of data. The first is an extended set of epidemiological data, which resulted from a compilation of the prevalence and mortality data for AF and for stroke in Portugal. For the distribution of mortality by age, gender and cause of death the WHO Europe mortality database was used. The analysis also uses the results of FAMA, a study of the prevalence of AF in Portugal. Incidence rates were estimated from a review of the international literature. The second type of data concerns the relative risk (RR) of stroke for patients with AF. RR values by age group from the Framingham Study were used. Disability weights were taken from the Global Burden of Disease 2010. **RESULTS:** A total of 3863 deaths in Portugal in 2010 were related to AF, with 813 having AF listed as cause of death and the remaining 3.050 being stroke deaths attributable to AF. The AF attributable deaths are roughly 3.6% of total deaths in the country. The estimate total DALYs was 9.814 (2.251 for AF listed as the cause of death and 7.563 for stroke as cause of death attributed to AF). **CONCLUSIONS:** AF is an important cause of disease burden in Portugal. As reference, AF DALYs are roughly twice the estimated DALYs for skin cancer. AF should receive adequate attention from policy makers.

PCV158

SIMULATING THE POTENTIAL IMPACT OF IMPROVED BLOOD PRESSURE CONTROL ON CLINICAL AND ECONOMIC OUTCOMES IN RUSSIA

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OBJECTIVES: Russia faces a high burden of cardiovascular (CV) disease. Prevalence of all CV risk factors, especially hypertension, is high. Elevated blood pressure (BP) is generally poorly controlled, and medication usage is suboptimal. With a disease model simulation we assessed the impact of improved systolic blood pressure (SBP) control on the number and costs of CV events potentially averted in the hypertensive Russian population. **METHODS:** The Archimedes Model, a detailed computer model of human physiology, disease progression, and health care delivery was adapted to the Russian setting. Intervention scenarios of achieving SBP control rates (defined as SBP <140) of 30%, 40%, 50%, and 60% were simulated by modifying adherence rates of an anti-hypertensive medication combination and compared with current care (23.9% BP control rate). 100,000 hypertensive simulated individuals were modeled over a 10 year time horizon. Outcomes of major adverse cardiovascular events; stroke, myocardial infarction (MI) and CV death were reported. Direct health care costs of strokes and MIs were derived from official Russian statistics and price lists. **RESULTS:** To achieve SBP control rates of 30%, 40%, 50%, and 60%, adherence rates to the anti-hypertensive treatment program were 11.1%, 29.4%, 47.6%, and 65.9% respectively. CV death relative risk reductions were 5.0%, 13.2%, 21.4%, and 29.6%, respectively. For the current estimated 43,855,000 person Russian hypertensive population, each control rate scenario resulted in an absolute reduction of 398,097, 1,050,715, 1,703,334 and 2,355,952 CV deaths, and a reduction of 458,781, 1,210,881, 1,962,981, and 2,715,081 stroke/MI diagnoses. Averted direct costs from current care (225,781) were 12,834, 33,873, 54,913 and 75,952 million Rubles, respectively. **CONCLUSIONS:** Our simulation implies that a clinically significant number of CV events in the Russian hypertensive population may be prevented by achieving BP control through an antihypertensive drug combination. Averted costs may be re-allocated to strengthen evidence-based, preventive interventions.

PCV159

WHAT FACTORS PREDICT THE DECISION TO TREAT ACUTE CORONARY SYNDROME INVASIVELY? EVIDENCE FROM CLINICAL PRACTICE

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OBJECTIVES: To describe UK patients with acute coronary syndrome (ACS) who receive percutaneous coronary intervention (PCI) or are medically managed only (MM) and evaluate factors affecting approaches to treatment. **METHODS:** Patients registered with a general practice participating in the Clinical Practice Research Datalink (CPRD) with Hospital Episode Statistics (HES)-linked data were included if they had an ACS-related hospitalization (January 2008-December 2009). Logistic regression analyses were used to assess what characteristics at ACS-related hospitalization date were associated with PCI or MM classified at 30-days post-hospitalisation date (30DHD). **RESULTS:** A total of 10,753 ACS patients were identified (60% male, 67% aged ≥ 65, 81% had NSTEMI or UA at index date); 30DHD, 74% were MM and 26% had PCI. Factors associated with receiving PCI were STEMI at hospitalization (OR 3.73, 95% CI 3.30, 4.22); patients with previous PCI pre-hospitalization (OR 1.29, CI 1.07, 1.55) and current smokers (OR 1.16, CI 1.02, 1.32). Patients less likely to receive PCI included women (OR 0.67, CI 0.60, 0.75), those with previous ACS hospitalization (OR 0.69, CI 0.59, 0.80), those prescribed: statins 12 months pre-hospitalization date (OR 0.75, CI 0.67, 0.85), diuretics (OR 0.72, CI 0.61, 0.85), ACE inhibitors (OR 0.84, CI 0.75, 0.95), proton pump inhibitors (OR 0.86, CI 0.77, 0.96), those previously diagnosed with congestive heart disease (OR 0.54, CI 0.42, 0.71), atrial fibrillation (OR 0.67, CI 0.54, 0.83), stroke/TIA (OR 0.77, CI 0.63, 0.93) or renal disease (OR 0.82, CI 0.71, 0.95). Age and BMI were significant as continuous variables with non-linear effects. **CONCLUSIONS:** This is the first large-scale UK study using real-world data to assess socio-demographic and clinical predictors for PCI in ACS, and indicates that NSTE-ACS patients and those with comorbidities are more likely to be MM. This will be discussed in light of current treatment of STEMI and NSTE-ACS in the EU.

PCV160

THE PHARMACOECONOMIC OF CARDIOLOGY IN RUSSIA

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OBJECTIVES: To analyze the current state and the trends of pharmacoeconomic research in cardiology in Russia. **METHODS:** We have reviewed all main databases of scientific publications (PubMed, eLibrary.ru etc.) as well as individual journals, conference abstracts and web-sites for the period 2007–2013. **RESULTS:** It was found that cardiology becomes one of the most popular topics for pharmacoeconomists, partly because of its significance for public health and the growing amount of state funding for the prevention of CVD in recent years. Cardiovascular problems make up 16-25% of congress abstracts and 26% of applications for Da.Signa, the only award in pharmacoeconomics in Russia. Most publications in our analysis dealt with arterial hypertension (44%), coronary heart disease (16%) and chronic heart failure (7%). A wide range of original and generic drugs were included into these researches, however in most cases there was a prevalence of cost-efficiency analysis and modeling methods based on the results of non-Russian clinical trials and meta-analyses. Overwhelming majority of the results were published in Russian and therefore are not available for the non-Russian-speaking reader. **CONCLUSIONS:** During the last five years, a great number of pharmacoeconomic research in cardiology have been performed and published. However, there is a need of clinical trials that would consider the Russian specifics and health care standards. Pharmacoeconomic analysis should become an integral part of clinical trials, especially in case of drug therapy of myocardial infarction, stroke and other conditions, where the differences exist between the Russian and foreign practice. Some of the analyzed publications should be updated because of the recent changes in health care standards.

PCV161

THE VOLUME-OUTCOME RELATIONSHIP AND MINIMUM VOLUME STANDARDS – EMPIRICAL EVIDENCE FOR GERMANY

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OBJECTIVES: To analyze the volume-outcome relationship for patients with intact abdominal aortic aneurysm (AAA) and hip fracture (HIP) and define hypothetical minimum volume standards to assess changes in access. **METHODS:** The analysis is based on administrative data coming from the German system of diagnosis related groups of about 18.6 million hospital cases of 1780 German hospitals for the year 2007. The data includes detailed information on patient characteristics used for