the great heterogeneity caused by many treatment arms made it impossible to develop a feasible model to estimate incremental (cost-) effectiveness compared to other treatments. CONCLUSIONS: Outcomes research of botanomiaz is complicated by extensive treatment variation and great patient heterogeneity in everyday practice. Although it is possible to generate evidence on appropriate drug use to facilitate informed decision making, much uncertainty remained regarding the incremental (cost-) effectiveness compared to other treatments. Policymakers should carefully consider if outcomes research could potentially lead to an acceptable reduction in decision-making uncertainty or that other options such as financial- or outcomes-based risk sharing agreements might be more appropriate to obtain sufficient value for money.

PCN128 ESTIMATING THE VALUE OF COMPANION DIAGNOSTICS: ARE THE INCENTIVES RIGHT?
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OBJECTIVES: Targeted therapies are hoped to deliver high-quality, effective treatments that control cost growth. Companion diagnostics (CDs) – biomarker tests to identify patients likely to benefit – are key to this potential. However, as the US’s IOM has noted, reimbursement for CDs may not provide optimal incentives to develop critical CDs. To illustrate, we examined the cost benefit of CDs based on current reimbursement levels and the clinical and economic benefit allowed by biomarker targeting. METHODS: We identified 6 approved CD/therapeutic combinations, all in oncology. Several parameters were obtained: efficacy of therapeutic in individual patient subsets, treatment costs to non-targeted patients, costs to patients with the biomarker, therapeutic and diagnostic costs, and prevalence of the biomarker. CD clinical benefit was measured by the improvement in therapeutic efficacy in targeted versus untargeted patients. CD economic benefit was based on therapy cost avoidance assuming that patients in a non-screened scenario undergo 1-month trial. To compare, we estimated a similar measure of the clinical cost benefit for all oncology therapies approved since 2000. RESULTS: Estimated net economic benefit of CDs ranged from about $250 to $8,000. Estimated economic cost: benefit ranged from approximately $0.05 to $0.55 per USD saved. Estimates of the clinical cost benefit of CDs ranged from approximately $1.50 to over $15 per one-percent improvement in clinical efficacy. Comparison oncology therapies are reimbursed at rates that imply an average clinical cost benefit of about $750 per one-percent improvement in efficacy for non-OS benefits to $240 per one-percent improvement in OS. CONCLUSIONS: Our calculations support the IOM statement that current reimbursement for CDs may not be optimal. Relative to the value placed on oncology therapeutics, the reimbursed value CDs is a small fraction of what would be expected under value-based pricing. This has implications for the structure of the CD industry as well as the potential for future innovations in diagnostics.

PCN129 EMERGING MARKET ACCESS TRENDS: PRICING AND COVERAGE OF TARGETED CANCER THERAPIES IN RUSSIA (2011-2012)
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OBJECTIVES: In various emerging markets coverage of branded drugs is centralized using a national formulary list of covered products. Among new branded products pricing and coverage of expensive cancer drugs has been undergoing significant changes in various emerging markets. The objective of this study was to understand new trends in pricing and coverage of targeted cancer therapies in Russia. METHODS: To understand the changes in coverage of targeted cancer therapies, the 2011 and 2012 essential drugs lists for Russia were analyzed for ATC codes L01XC, L01XE, L01XZ, L04AX and L04AX. The newly covered and non-covered products were identified and analyzed for factors driving the change in coverage. For selected analogs price change during 2011 and 2012 was analyzed to understand trends in price set by the government. RESULTS: Analysis of 2011-2012 essential drug lists show significant change in coverage of targeted cancer therapies. In 2011, only 5 targeted cancer therapies were covered in the essential drug list (Bevacizumab, Rituximab, Trastuzumab, Imitinib and Zort ezinib). In 2012, 8 branded cancer drugs were added to the list, expanding the coverage of targeted cancer therapies to 13 products. The price change trend for selected analogs show some products covered at the same price while for others price was reduced by 5-10%. For example, for one of the covered monoclonal antibodies price did not change during 2011 and 2012, while prices for a proteasome inhibitor and a tyrosine kinase inhibitor were lowered by 6% and 10%, respectively. CONCLUSIONS: Analysis of pricing and coverage of targeted cancer therapies in Russia shows expansion of access of several products.

PCN130 ROLE OF THE HEALTH CARE PAYMENT SYSTEM ON THE PATIENT ACCESS TO ORAL ANTICANCER DRUGS: A COMPARISON OF FRENCH AND NORTH AMERICAN SITUATIONS
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OBJECTIVES: Despite the convenience of oral anticancer drugs (OAD), several factors restrict the patient access to these treatments including the way the health care payment system (HPS) reimburses OAD or hospitals services. From the French and American (US) experiences, we aimed at discussing how the HPS may create disincentives to the use of OAD. METHODS: A literature review was performed from Medline, Health Insurance reports, law articles, roundtable discussions to analyze economic challenges of OAD in both systems. RESULTS: French hospitals are financed by the Health Insurance (HI) according to the nature and quantity of medical services. Different models allow prefectural hospitals to access financial support to the community settings. 2 millions of intravenous (IV) chemotherapy sessions are performed yearly (i.e. 700 million Euros). A 10% decrease of IV chemotherapy sessions would induce an income loss of 70 million Euros for hospitals. The OAD also generate additional activities, such as therapeutic education, commerce effects (e.g. for a safe use) which are not considered in the payment of hospital activities. Although OAD are fully covered by the HI, physicians may be reluctant to prescribe OAD partly due to these economic constraints. In the US system, the reimbursement of OAD was limited to those with IV equivalence covered by the Medicare Part B insurance. Since 2011, oral/OAD therapy parity legislation was adopted to provide beneficiaries with an extra-coverage ($2850 covered with a 5% copay) but patients still have to support the cost of drugs before insurance claims, and may face with heterogeneous co-payments depending on private insurances, preventing those with low income to be treated with OAD. A 1% point reduction in cost-sharing would induce a 2.7% increase in OAD utilization. CONCLUSIONS: The adoption of drug reimbursement systems and hospital financing are key issues to ensure equal and safe patient access to the most appropriate anticancer drugs.

PCN131 REFORMING THE THEORETICAL REALITY: THE LINK BETWEEN OUTCOMES AND PRICE
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OBJECTIVES: By utilizing health technology assessments to inform pricing and reimbursement decisions, payers have tried to achieve prices that accord greater value to health care systems. To determine whether this theory holds true, we aimed to investigate the link between drug outcomes and pricing in EUS markets both within and between therapy areas. METHODS: An initial screen of therapy areas was conducted to select relevant candidates for further analysis. A qualitative assessment was performed using cost-effectiveness ratios calculated by multiplying the incremental cost of high cost therapies available, number of new entrants and availability of objective measure of health outcomes. Based on this screen, oncology and diabetes were selected for further analysis and comparison. Ten of the most recent entrants were selected for further analysis in each therapy area. For each product, price premium relative to the most relevant comparator was calculated in EUS markets, and compared to incremental change in outcome measures. In oncology, overall survival, progression free survival and time to progression were selected as outcome measures. In diabetes, HbA1c reduction, weight loss and proportion achieving HbA1c target were utilized. RESULTS: As expected, products displaying no or low incremental improvements received minimal price premiums relative to the comparator. However, although improved outcomes were associated with price premiums, the magnitude of this increase was not correlated to the degree of improvement. Furthermore, price premiums in oncology varied to a greater extent and reached higher levels relative to diabetes. CONCLUSIONS: This research indicates that in EUS markets, drug pricing has not historically been pegged to health outcomes in a quantitative manner. With recent and forthcoming evolutions in pricing processes in the US and the UK, future approvals in these and other therapy areas may display more “rational” pricing and deliver greater value to the health care systems.

PCN132 DURATION OF GEFTINIB TREATMENT IN EFGR MUTATION POSITIVE NSCLC PATIENTS IN A UK SINGLE PAYMENT ACCESS SCHEME (SPA)
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OBJECTIVES: The UK National Institute for Health and Clinical Excellence (NICE) recommended gefitinib for use first line in locally advanced or metastatic, EGFR positive, NSCLC when supplied via the SPA scheme. This was based on the mean duration of treatment of 8.8 months observed in the IPASS study. The single fixed payment under the scheme is triggered at the order of the third pack and covers a patient for their total supply of gefitinib treatment. The objective of this study is to estimate the length of gefitinib therapy and confirm the value accepted by NICE. METHODS: This research indicates that in EUS markets, drug pricing has not historically been pegged to health outcomes in a quantitative manner. With recent and forthcoming evolutions in pricing processes in the US and the UK, future approvals in these and other therapy areas may display more "rational" pricing and deliver greater value to the health care systems.

PCN133 UTILISATION OF ANTINEOPlastic AGENTS INVOLVED IN TREATMENT OF NSCLC IN SLOVAK REPUBLIC FROM 2008-2011
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OBJECTIVES: The adaptation of drug reimbursement systems and hospital financing are key issues to ensure equal and safety patient access to the most appropriate antineoplastic drugs.
OBJECTIVES: To evaluate utilization of drugs involved in treatment of NSCLC, its consumption in terms of expenditures and numbers of packages prescribed in Slovakia from 2008 - 2011. METHODS: Statistical analysis was carried out on IMS Health's Oncology Analyzer™ as the primary data source. Oncology technology classification of a drug was used to assess the impact of treatment. This study aims to avoid these limitations by this approach does not reveal which indication, line of therapy, nor patient sub-group a drug has been used to treat. This study proved high economic burden and a quantitative amount of expenditures on antineoplastic agents, used also in treatment of NSCLC.


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OBJECTIVES: To assess availability (patients' access) to medicines for rare diseases (ODs) and to determine expenditures in the horizon of 7 years (within years 2004 - 2010) in absolute figures and relative proportion related to expenditures of all medicinal products in the Czech Republic (CR). METHODS: We identified all OD registered until September 2011 by EMA. It was compared the year of registration with the year of patient's access to particular OD. Patient populations were assessed for the UK, and were also compared to uptake in similar European countries. RESULTS: Health technology appraisal (HTA) recommendations from the UK National Institute of Health and Clinical Excellence (NICE) are intended to standardise health care throughout the NHS and hasten the uptake of new, more effective medicines that are cost-effective. Several studies have investigated whether NICE guidance influences UK drug uptake as intended, mostly using sales data. However, this approach does not reveal which indication, line of therapy, nor patient sub-group a drug has been used to treat. This study aims to avoid these limitations by using IMS Health's Oncology Analyzer™ as the primary data source. Oncology AnalyzerTM contains detailed records for a representative patient sample, allowing analyses to be focussed on the particular indication and treatment criteria specified in NICE HTAs. METHODS: HTAs for breast cancer drugs approved by NICE from 2005 to 2008 were analysed. For each HTA, the proportion of the eligible patient sub-group that received the recommended (or not recommended) drugs from Q1 2005 to Q1 2009 was determined. Changes in drug use in the relevant patient population were assessed, and uptake in the UK and other similar European countries. RESULTS: NICE produced 6 HTAs for breast cancer, encompassing 8 drugs, during the period assessed. In 5 out of 6 cases, the publication of an HTA was followed by the recommended change in UK drug uptake. However, when UK uptake of the same drugs in four other European countries (France, Germany, Italy and Spain), the UK ranked at the bottom of the group. CONCLUSIONS: The NICE HTAs assessed were mostly followed by the intended changes in drug uptake, suggesting they were implemented, at least by some PCTs. Despite this, international comparisons of uptake for these drugs revealed that the UK performed poorly compared to similar European countries.

PCN135 THE ECONOMIC VALUE OF MEDICAL PROGRESS, THE CASE OF CANCER IN FRANCE (1990-2010)

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OBJECTIVES: Anti-cancer drugs are often challenged on the ground that most clinical trials show modest gains in terms of overall survival associated with high acquisition costs. But in the same time, oncologists make the point that progress is incremental and should be assessed dynamically on a longer period. We collected various data over a 20 year period (1990-2010) to provide a retrospective view of the progress that has been achieved in medical terms and the amount of public resources that has been spent through better treatments. METHODS: We constructed two scenarios. The first one is a reconstruction of what actually happened with anti-cancer drugs, the second one is a forecast of how these drugs would perform if their 1990/1990 prices were a lower average treatment cost. But in the same time, the number of deceased pa-

PCN136 EXPENDITURES ON ORPHAN DRUGS IN CANADA, EUROPE (EUS + BELGIUM, SWEDEN AND THE NETHERLANDS) AND AUSTRALIA IN 2009

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OBJECTIVES: To compare expenditures on orphan drugs (OD) in Canada, Europe (EUS + Belgium, Sweden and Netherlands) and Australia in 2009. METHODS: ODs were selected for analysis for the following inclusion criteria: 1) approved by the European Medicines Agency (EMA) between 2005 and 2007, 2) included in the EMA orphan designation until December 2011, 3) remained available until December 2011, 4) received Canadian marketing authorization, and 5) received a Canadian Health Technology Assessment (HTA) recommendation between 2006 and 2011. Utilization (total sales) from IMS Marketing Mix data was compared across countries was carried out by deriving the cost/capita (expressed in CAD$) and total expenditures were compared to total drug budget as reported from the Organization for Economic Cooperation and Development (OECO) 2011 report. RESULTS: Of the 18 drugs selected, data on 8 drugs were reported. In 2009, Canadian cost/capita was among the lowest ($0.29) in the 10 countries while the highest were in France, Italy and Germany ($0.94; $0.70 and $0.66 respectively). Differences were noted for oncology and non-oncology drugs, namely expenditures in rare cancers remained among the lowest in Canada ($0.19) while these expenditures were highest in France, Germany and Italy ($0.76; $0.47 and $0.47 respectively). This trend appears to follow previously reported low access of oncology drugs in Canada vs. other developed systems (13/14 countries). France, Sweden and Italy were associated with the highest percentage of expenditures related to conditional or exceptional (per particular patient) reimbursement. The current expenditures were highest in France, Italy and Germany ($0.76; $0.47 and $0.47 respectively). The lowest were observed in the UK, The Netherlands and Canada (0.22%, 0.19% and 0.14% respectively). CONCLUSIONS: Canada was among the lowest in regards to cost/capita and percentage of OD expenditure compared to total drug expenditures in 10 countries. This is likely explained by the higher cost of NICE negative recommendations which impacts payer’s decision.

PCN137 NICE TECHNOLOGY APPRAISALS AND THE UPTAKE OF BREAST CANCER DRUGS IN THE UK

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OBJECTIVES: Health technology appraisal (HTA) recommendations from the UK National Institute of Health and Clinical Excellence (NICE) are intended to standardise health care throughout the NHS and hasten the uptake of new, more effective medicines that are cost-effective. Several studies have investigated whether NICE guidance influences UK drug uptake as intended, mostly using sales data. However, this approach does not reveal which indication, line of therapy, nor patient sub-group a drug has been used to treat. This study aims to avoid these limitations by using IMS Health’s Oncology Analyzer™ as the primary data source. Oncology AnalyzerTM contains detailed records for a representative patient sample, allowing analyses to be focussed on the particular indication and treatment criteria specified in NICE HTAs. METHODS: HTAs for breast cancer drugs approved by NICE from 2005 to 2008 were analysed. For each HTA, the proportion of the eligible patient sub-group that received the recommended (or not recommended) drugs from Q1 2005 to Q1 2009 was determined. Changes in drug use in the relevant patient population were assessed, and uptake in the UK and other similar European countries. RESULTS: NICE produced 6 HTAs for breast cancer, encompassing 8 drugs, during the period assessed. In 5 out of 6 cases, the publication of an HTA was followed by the recommended change in UK drug uptake. However, when UK uptake of the same drugs in four other European countries (France, Germany, Italy and Spain), the UK ranked at the bottom of the group. CONCLUSIONS: The NICE HTAs assessed were mostly followed by the intended changes in drug uptake, suggesting they were implemented, at least by some PCTs. Despite this, international comparisons of uptake for these drugs revealed that the UK performed poorly compared to similar European countries.

PCN138 PATTERNS OF ANTICOAGULANT USE IN CANCER PATIENTS RECEIVING CHEMOTHERAPY

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OBJECTIVES: Cancer patients receiving chemotherapy are at risk of venous thromboembolism (VTE). Information on anticoagulant use in these patients is lacking. This retrospective cohort study describes the patterns of anticoagulant use in this population using a US claims database. METHODS: The MarketScan® databases, a nationwide database covering >30 million patients annually, were used. Adult cancer patients (ages 18-80) receiving chemotherapy between 2004-2010 were included. Patients with bleeding history before chemotherapy were excluded. Six cancer types were assessed: lung, colorectal, pancreas, bladder, stomach, and ovary. Anticoagulant use 2 weeks before or after chemotherapy was determined using National Drug Code or Healthcare Common Procedure Coding Systems. Anticoagulant therapy duration was calculated as the number of days of anticoagulant therapy divided by the number of days between chemotherapy administration. The sum of total injections administered and total days of supply from prescriptions dispensed within 2-weeks before/after chemotherapy initiation. RESULTS: Overall, 30% (N=21,101) of the total patients (N=70,822) used anticoagulants within 2 weeks before/after chemotherapy. Of these, 34% used anticoagulants 2 weeks before, 30% 2 weeks after, and 36% in both periods. Users’ median age was 61 years.