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but not acquainted on principles of STG. We conclude that MPs need repetitive in-service training programs to ensure the adherence to STG and MSs are in need of skill development programme to pertain STG in clinical practice.

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EVALUATION OF COST CONTAINMENT INTERVENTIONS INTRODUCED ON THE COMMUNITY DRUG SCHEMES IN IRELAND USING A NATIONAL PRESCRPTION CLAIMS DATABASE

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OBJECTIVES: The aim of this paper was to examine trends in expenditure of pharmaceuticals on the community drug schemes from 2005 to 2010, during which time a range of cost-containment interventions were introduced which affected the pricing mechanism for pharmaceuticals in Ireland. **METHODS:** Data were analysed using a national prescription claims database according to drug class, i.e. generic, patent and off-patent for the two largest schemes; the General Medical Scheme (GMS) and Drug Payment (DP) scheme. Segmented regression was used to analyse the effects of the interventions on expenditure. **RESULTS:** An increase in expenditure was noted across all schemes up to 2009 and declined thereafter to the end of the study period (October 2010). Significant reductions in expenditure were noted following the introduction of a 20% price-cut to patent-expired products (off-patents) ($p<0.001$). In July 2009, pharmacy and wholesale margins were reduced, resulting in significant reductions in expenditure for patented (GMS; $p<0.05$ and DP scheme; $p<0.001$) and generic (DP scheme only; $p<0.01$) products. No significant reductions in expenditure were noted for off-patent products at this time. Furthermore, no significant reductions in expenditure were noted for off-patents following a 15% price reduction in January 2009 and a further 40% price reduction in February 2010. **CONCLUSIONS:** Results from the study indicate that reductions in the wholesale margin and pharmacy mark-up had the largest impact on reducing pharmaceutical expenditure during the study period. This analysis of national expenditure trends over a six-year period provides valuable information for the healthcare payer on the impact of the cost-containment interventions and may provide a benchmark for future negotiations with the pharmaceutical industry.

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RADIOLOGY DIAGNOSTICS AND INTERVENTIONAL RADIOLOGY SERVICES UTILIZATION PATTERNS AND ECONOMIC CONSEQUENCES ANALYSIS IN A LARGE TERTIARY CARE UNIVERSITY HOSPITAL – THREE YEAR TRENDS

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OBJECTIVES: Health economic estimates of radioactivity-mediated diagnostic and treatment procedures are seldom in literature. This would be the first one to compare all these examinations and interventions in a large scale trial. Assessment of costs matrix and prescribing patterns of radiology diagnostics and interventional radiographics services and the roots of clinical decision making process contributing to unacceptable allocation of scarce hospital resources. **METHODS:** All inpatients medical dossier files due to wide range of admission causes (approximately 50,000 per year) during three year term and their complete and accurate files on imaging diagnostics and interventional radiographics procedures applied and their consequent costs. An in depth retrospective bottom-up trend analysis of consumption patterns and expenses relative to diagnosis at discharge conducted from perspective of Third party payer, for more than 200.000 inpatients of large tertiary care university hospital (1200 beds) admitted from 2007-2009. **RESULTS:** There were 10.488 patients in 2007, 12.857 in 2008 and 11.893 in 2009 radiologically processed patients with the total expense of provided services of €1,312,123 in 2007, €2,812,460 in 2008 and €1,829,764 in 2009. The patients cost on average 9.887 ± 37.518 RSD (125 ± 475€) in 2007, 17.206 ± 69.552 RSD (218 ± 881€) in 2008 and 14.408 ± 68.297 RSD (154 ± 731€) in 2009. On average, each patient got one lungs graph, each 7th got the ultrasound of the abdomen, each 19th a CT check of the endocranium, whereas each 25th patient got the NMR of the head. **CONCLUSIONS:** The obvious findings confirm irrational prescribing of diagnostic procedures and necessities of cutting costs. These consumption patterns noticed, should gave an important momentum for policy-makers to intervene and provide higher guidelines adherence from clinicians perspective.

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GUIDELINES FOR PHARMACOECONOMIC EVALUATION FOR SERBIA

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OBJECTIVES: To provide methodological and reporting guidelines for pharmacoeconomic evaluation (PE) for Serbia. **METHODS:** A group of researchers specialized in economic evaluation of medicines developed the PE guidelines, following the initiative of other countries in this framework, to provide recommendations for the standardization of methodology applicable to economic evaluation of medicines in Serbia. The guidelines were written in accordance with the best European and international guidelines, with respect to the existing legislation in Serbia. Guidelines are based on a "reference case" (RC) which includes set of preferred methods which analysts should follow when conducting PE for each component of the economic evaluation. **RESULTS:** The literature review should be transparent and reproducible. The RC analysis should only include direct health care costs from the perspective of the health care payer, the governmental payer and the patient. The study question should specify the target population(s) for the intervention. The comparator to be considered in the evaluation is the treatment that most likely will be replaced by the new treatment. Cost-effectiveness and cost-utility analyses are accepted as reference case techniques, under specific conditions. Outcomes in PE in terms of final endpoints instead of intermediary outcomes should be used in the incremental cost-effectiveness ratio (ICER). For the calculation of quality-adjusted life-years (QALYs), a generic quality-of-life measure should be used. Lifetime horizon in principle in PE should be applied, shorter time horizons requires appropriate justification. Uncertainty around the ICER should always be assessed. Costs and outcomes should be discounted at 3% and 1.5%, respectively **CONCLUSIONS:** First Serbian PE guidelines were developed as results of changes in Serbian health system and the need for better and more complete economic information by decision makers. By providing standards for conducting and reporting of economic evaluations, guidelines can address current needs and requests of Serbian health care system.

Health Care Use & Policy Studies – Regulation Of Health Care Sector

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INTANGIBLE CAPITAL AND RETURN ON ASSETS IN THE PHARMACEUTICAL INDUSTRY

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OBJECTIVES: Price regulation for drugs is often justified by allegedly high profits of the pharmaceutical industry. While older explanations emphasize the importance of market-entry barriers and monopoly power, we argue that high profits are mainly due to measurement errors that arise from the treatment of research and development (R&D) investments and intangible capital by conventional accounting methods. Conventional accounting methods treat R&D as costs and not as an investment that generates (intangible) capital. Applying accounting data for the calculation of companies' return on assets in turn leads to an upward bias of profitability. In this paper we offer a method that corrects for this bias. Based on financial data of 3382 firms worldwide we also estimate a corrected rate of return. **METHODS:** Relying on financial data of 86 publicly listed pharmaceutical firms between 1985 and 2004, we treated R&D expenditures as an investment which has to be activated in the balance sheet. The assumed depreciation rate was 10%. We then calculated the return on assets (i.e. profits after depreciation of intangibles/total assets including intangible capital) and compared the corrected returns with that of 3296 firms of 34 other industries. **RESULTS:** We show that corrected profit rates of the pharmaceutical industry drop by three (average) to five (median) percentage points when assets are calculated to include intangible R&D capital. While the uncorrected profitability of the pharmaceutical industry is indeed among the highest of all industries (only outperformed by the oil and gas industry), the pharmaceutical industry ranks only eleventh when intangible assets are taken into account. **CONCLUSIONS:** Our analysis shows that pharmaceutical profits are biased upwards due to measurement errors of conventional accounting measures. Against this background it is questionable if further price cuts of pharmaceuticals are a good measure of reigning in the exploding health bill.

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EVOLVING P&R COMPLEXITIES ARE AFFECTING LAUNCH SEQUENCING AND TIME TO MARKET IN 18 DEVELOPED AND EMERGING MARKETS

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OBJECTIVES: The aim of this study was to evaluate how national pricing and reimbursement processes are affecting medicines' time-to-market (defined as the delay in days between regulatory approval and market launch) and how their evolution over the last 10 years has influenced launch sequences across a sample of 18 developed and emerging markets. **METHODS:** For each market discussed, national pricing and reimbursement processes were studied through primary and secondary research. In each market, these processes were considered from a public versus private sector perspective and from a primary versus secondary-care segment perspective. Meanwhile, to assess evolving launch sequencing trends, time-to-market data were collected in each of the discussed markets for 16 medicines approved for commercialisation between 2000 and 2010. **RESULTS:** Medicine launch occurs within weeks of regulatory approval in free-pricing countries and upon completion of pricing and reimbursement negotiations in countries where either the public or both the public and private markets are price-controlled. Pharmaceutical launch sequences have evolved over the last 10 years, both from a geographic and temporal perspective. Based on our sample of medicines, the time gap between first and second international launch has narrowed from an average of 276 days in 2000 to an average of 57 days in 2010. Primary-care medicines reach the market faster and in a greater number of countries than secondary-care medicines. Secondary-care medicines remain preferentially commercialised in mature, top-tiers markets unless they meet a medical need in emerging markets. **CONCLUSIONS:** A Medicine's time-to-market varies from country to country and broadly reflects the level of complexity and differentiation of national pricing and reimbursement processes. However, additional factors also come into play, including the level of innovation of the medicine, the national medical need for the medicine, the sector (public versus private) and segment (primary versus secondary care) targeted, and the corporate strategy.