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PATTERNS AND PREDICTORS OF HOSPITAL READMISSION IN TAIWAN

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OBJECTIVES: Hospital readmissions have been an important issue, as they reflect suboptimal quality of medical care and incur high health care expenditures. However, limited information is available on the patterns of hospital readmission in the entire population to support a thorough planning to prevent hospital readmissions. Therefore, this study aimed to examine the patterns and economic burden of hospital readmission in Taiwan, and identify predictors of hospital readmissions. **METHODS:** This study used the National Health Insurance Research Database of enrollees randomly selected from those enrolled in the National Health Insurance program in 2005. Individuals who were admitted to acute hospitals in 2005 were selected and their readmission patterns one-year after discharge were examined. Cox proportional hazards regression model was adopted to identify predictors of hospital readmission. **RESULTS:** The 30-day, 6-month and one-year readmission rates were 11%, 25%, and 34%, respectively. During the one-year follow-up, 52% of total health care expenditures were due to hospital readmissions. Of those who were readmitted to hospitals, 56% were readmitted once and took up 29% of the cost of rehospitalization. However, those readmitted for more than three times (5%) accounted for 30% of the cost. The major disease category of the highest 30-day and one-year readmission rates was neoplasms. The disease of the highest 30-day and one-year readmission rates were cancer of bronchus and lung (36%) and cancer of liver and intrahepatic bile duct (74%), respectively, and the most frequent reason for readmission was the disease itself. Age, gender, place of residence, previous hospitalization history, comorbidities, and length of stay of the index hospitalization were risk factors of hospital readmissions. **CONCLUSIONS:** This study identified diseases of higher short-term and long-term readmission rates, causes of short-term and long-term hospital readmissions, and predictors of hospital readmission. The information is of importance for planning interventions to reduce hospital readmission rate.

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SECURE SYSTEM FOR IV ADMINISTRATIONS: HEALTH ECONOMIC IMPACT OF A "SMART" INFUSION SAFETY SYSTEM

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OBJECTIVES: More than half of medication errors are reported during administration. "Smart" Infusion Safety Systems (SISS) have been developed to avoid administration errors and provide data for continuous quality improvement (CQI). Few data produced by SISS have been analysed. Given the lack of clinical trials, a model was developed in order to assess the economic benefits of SISS from the perspective of a French public hospital. **METHODS:** Comprehensive data from 6 intensive care units (ICU) were analysed. Two types of alerts were defined: hard (absolute) and soft limits. An avoided error was defined as the detection of a scheduled infusion over a hard limit or a scheduled infusion over a soft limit that was later overridden by staff. The severity of consequences was estimated on the HARM INDEX score, which is based on the pharmacologic risk, overdose detectability, overdosing range and the type of hospital unit. According to this score, errors were categorised as minor, significant, and serious. The economic value was estimated based on the hypothetical resulting length of stay had the error not been avoided, which increases according to error severity, and the financial investment for SISS. **RESULTS:** Overall, 207,025 infusions were analysed from the database of 6 ICUs and 8,503 of them were associated with a safety alert (4.1%), including 987 errors (0.48%). Applied to one public ICU equipped with 5 SISS, the model estimates that SISS would prevent 78 errors per year (54 minor, 12 significant, 12 serious) and avoid 173 days of hospitalisation per year. This corresponds to an annual savings of €139,491 for the hospital (39% and 61% from significant and serious errors, respectively). **CONCLUSIONS:** This model demonstrates the high economic burden of medication errors for French public hospitals and the need for CQI. To date, no equivalent evaluation has been conducted in France.

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VALUE OF LIFE AND COST OF PRE-MATURE DEATHS WITH THE PERSPECTIVE OF PRODUCTIVITY AS NET TAX REVENUE: A COMPARISON IN FRANCE, GERMANY, ITALY, SPAIN, UNITED KINGDOM

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OBJECTIVES: The Human Capital Theory emphasizes investments to the health care sector as an important element in achieving and sustaining economic development. Investments to health care sector improves macro and micro economic outcomes for the whole society. The aim of this study is to calculate the possible produced value for a life-time term (VLT) and cost of pre-mature deaths (CPD) from the productivity for France, Germany, Italy, Spain, UK (UK). **METHODS:** Net present value (NPV) of the taxes and spending for each year were calculated. For calculating NPV in the government perspectives, two modelling approaches were combined, human capital modelling based on lives saved and lost productivity, and generational accounting, which accounts for a range of other government fiscal transfers to citizens. The possible produced value for a life-time term for each country were assumed as calculating the total NPV for each country depending on the countries life expectancy. CPD for each countries were assumed as the difference between NPV on the year of life expectancy and each decades as life years 60, 50, 40, 30, 20, 10. The economic values for the model of each country derived from World Bank, OECD, UNESCO or WHO. **RESULTS:** Possible produced VLT term for each country were calculated as US\$ 993.347, US\$ 629.814, US\$ 245.885, US\$ 48.818 and US\$ 1.628.957 for France, Germany, Italy, Spain, UK, respectively. CPD per person for France were calculated as US\$ -1.060.571, US\$ -1.148.852, US\$ -887.348,

US\$ -551.873, US\$ -224.070 and US\$ -10.972 for the life years 10, 20, 30, 40, 50 and 60 respectively. Although numbers were different, the trend was same for Germany, Italy, Spain, UK. **CONCLUSIONS:** However the study was based on a hypothetical model that calculated the NPV with the taxes and spending in a life-time term, the results of each country were parallel.

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SWITCHING PATIENTS WITH PRIMARY ANTIBODY DEFICIENCIES TO HOME-BASED SUBCUTANEOUS IMMUNOGLOBULIN: ECONOMIC EVALUATION OF AN INTERPROFESSIONAL DRUG THERAPY MANAGEMENT PROGRAM

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OBJECTIVES: Lifelong immunoglobulin G (IgG) replacement is the standard therapy for patients with primary antibody deficiencies. It can be administered either intravenously (IVIg) by health care providers in hospital or subcutaneously (SCIG) by patients at home. However, self-administration requires patients' education and support over long term to ensure proper adherence and optimal efficacy and safety. Every patient who switches to SCIG is proposed by the Polyclinique Médicale Universitaire (Lausanne, Switzerland) a drug therapy management program with a nurse and a community pharmacist including training, coaching and follow-up. The aim of the study was to evaluate if switching to SCIG at home including the management program was cost-effective compared to IVIg at hospital. **METHODS:** Assuming that both therapies provide similar efficacy, a 3-years cost-minimization analysis based on a simulation model was performed from a societal perspective. Health care costs (IgG, time of professionals, infusion pumps and disposables) were derived from administrative data. Transport and losses of productivity were estimated. One-way sensitivity analyses were performed. **RESULTS:** Under base case assumptions, SCIG at home was estimated at 34960 CHF per patient the first year and 30 030 CHF in subsequent years against 34 170 CHF per year for IVIg. The total savings for a switch to SCIG at home with the program was 7490 CHF per patient over 3 years. Results were relatively sensible to the assumptions. **CONCLUSIONS:** Home-based SCIG therapy including an interprofessional therapy management program may be an effective and efficient alternative to hospital for patients with primary antibody deficiencies. Additional costs from purchase of equipment and management program in the first year were offset by hospital costs avoided in short term. Additional studies are ongoing to analyse the retention in the therapy in medium term and the impact on quality of life.

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GENDER MEDICINE IN GERMANY: WHAT IS SO DIFFICULT ABOUT ITS IMPLEMENTATION? - AN EMPIRICAL STUDY IN GERMANY -

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OBJECTIVES: Personalized medicine is currently a popular topic in health care debates. Yet, the basic differentiation between females and males is hardly found in care delivery/health management programs. This study aimed at elucidating the opinion of German Statutory Health Insurance (SHI) managers and internal specialists regarding gender-specific care in order to understand their perceptions on responsibilities and possible implementation opportunities. **METHODS:** Between April and June 2013, a questionnaire on the implementation of gender medicine in the current health care landscape was developed. Based on literature review and expert consultations, it included open- and closed-ended questions on expectations/prioritization, need for action, and implementation of gender medicine. Forty-eight insurance managers of the largest German SHIs, covering over 95% of the market, and approximately 16,000 physicians of the German Society for Internal Medicine (DGIM) were contacted to complete a web-based survey. Descriptive analyses, Chi-square tests, and Pearson correlation coefficient were used to investigate the research objective. **RESULTS:** According to both, insurance managers (76%) and physicians (60%), gender-specific care is not sufficiently incorporated into standard medical care. Respondents claim the responsibility lies with the ministry of health, physicians and medical staff, as well as their associations. Specifically, more evidence is needed to incorporate gender aspects in treatment guidelines, an idea which is well-supported by insurances (65%) and physicians (70%). A top-down approach for implementation is preferred by 65% of insurance managers and 50% of physicians, whereas fewer participants encourage bottom-up mechanisms. **CONCLUSIONS:** German SHIs expect a significant governmental influence and/or support of self-governing bodies to achieve an incorporation of gender medicine into daily practice. Primary responsibility for the integration of gender-specific approaches is perceived to lie with physicians. As soon as critical hurdles in the medical field will be removed, the positive perception of both participating parties can be integrated in the implementation process of gender-medicine.

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VALUE OF LIFE AND COST OF PRE-MATURE DEATHS WITH THE PERSPECTIVE OF PRODUCTIVITY AS NET TAX REVENUE FOR TURKEY

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OBJECTIVES: The Human Capital Theory emphasizes investments to the health care sector as an important element in achieving and sustaining economic development. Investments to health care sector improves macro and micro economic outcomes for the whole society. The aim of this study is to calculate the possible produced value for a life-time term (VLT) and cost of pre-mature deaths (CPD) from the productivity for Turkey where the life expectancies was noted 75 years. **METHODS:** Net present value (NPV) of the taxes and spending for each year were calculated. For calculating NPV in the government perspectives, two modeling approaches were combined, human capital modeling based on lives saved and lost