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perspective) for the standard fertility treatment strategy is about 50M USD compared to the fast track fertility treatment strategy at about 41M USD for a net budget impact of 9M USD. The average cost per patient per year (patient perspective) for the standard fertility treatment strategy is approximately 4,800 USD compared to the fast track fertility treatment strategy at an estimated 4,200 USD for a net budget impact of approximately 600 USD. Results vary upon user inputs. **CONCLUSIONS:** An Excel-based model was developed to assist managed care organizations and employers with the development of an optimal fertility benefit design. The model serves as an educational tool to evaluate various fertility benefit designs in terms of patient and financial outcomes.

PIH90

POTENTIALLY INAPPROPRIATE MEDICINES AND POTENTIAL PRESCRIBING OMISSIONS IN OLDER PEOPLE AND THEIR ASSOCIATION WITH HEALTH CARE UTILIZATION: A RETROSPECTIVE COHORT STUDY

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OBJECTIVES: Older people are vulnerable to medicine-related adverse effects. In response to these concerns, prescribing indicators have been developed addressing: Potentially Inappropriate Medicines (PIMs), medicines with unfavourable risk-benefit ratios and Potential Prescribing Omissions (PPOs), omission of indicated medicines with a clear benefit. Little is known about the impact of PIMs and PPOs on health care utilization. This study aims to determine the association between PIMs and PPOs and health care utilization. **METHODS:** This is a retrospective cohort study of 2,051 community-dwelling participants in The Irish Longitudinal Study on Ageing (TILDA) aged ≥65 years with linked medication dispensing history from a national pharmacy claims database. PIM and PPO exposure in the 12 months prior to participants' TILDA interviews was determined using validated prescribing indicators: Screening Tool for Older Persons' Prescriptions (STOPP), the Screening Tool to Alert doctors to Right Treatment (START), Beers' criteria and Assessing Care of Vulnerable Elders (ACOVE) indicators. Outcome measures used were self-reported number of hospital visits (emergency department or inpatient admissions) and general practitioner (GP) visits in the previous year. Poisson regression models were used to determine the associations between PIMs and PPOs and these outcomes, adjusting for age, sex, education, number of medications, chronic conditions, and health insurance status. **RESULTS:** Overall PIM prevalence was 19.8-52.7% and PPO prevalence was 43.6-44.8% depending on the screening tool applied. Independent of screening tool used, PIMs and PPOs were significantly associated with hospital visits. For example, the adjusted Incident Rate Ratio (IRR) for each additional STOPP PIM was 1.24 (95%CI=1.15-1.35). With the exception of START PPOs, PIM and PPO exposure were also significantly associated with GP visits (adjusted IRR=1.10 (95%CI=1.06-1.15) for each additional Beers' PIM for example). **CONCLUSIONS:** PIM/PPO exposure is independently associated with increased health care utilization, supporting application of PIM/PPO indicators as robust measures of health care quality and patient safety in relation to prescribed medications.

PIH91

IMPACT OF ASSISTED REPRODUCTIVE THERAPY (ART) ON INFANT HEALTH AND HEALTH CARE COST OUTCOMES

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OBJECTIVES: Assisted reproductive therapy (ART) has increased dramatically in the US over the past several decades, nearly doubling from 1999 to 2008. Prior research has evaluated multiple outcomes from ART including newborn survival and birth weight as well as cost analyses measuring cost per live birth; despite robust information on ART as a whole there is no Colorado-specific data on neonatal intensive care unit (NICU) outcomes following ART and its economic implications. **METHODS:** Using data from the Colorado Department of Public Health and Environment (CDPHE) - Colorado Birth Certificate Database from 2007-2012, we use multivariable logistic regression to determine if ART births are associated with a higher risk of NICU admission compared to non-ART (no fertility treatment) births. We compare the risk of NICU admission among the full birth cohort and a singleton-only cohort controlling for plural births and birth order. We use Colorado state Health Care Policy and Financing (HCPF) fiscal year 2007-08, Colorado Centre for Reproductive Medicine costs and Colorado State Medicaid 2012 fee schedule data to estimate average NICU admission rates, total ART procedural costs and average costs of delivery, respectively. **RESULTS:** 190,795 live births in 2007-2012 were included into the birth cohort for analysis (12,666 ART births; 178,129 non-ART births). ART births resulted in a 52% increased risk of being admitted to the NICU compared to non-ART births (OR 1.52 [95% CI 1.38,1. 69]); singleton-only ART births had a 39% greater risk of being admitted to the NICU compared with singleton non-ART births (OR 1.39 [95% CI 1.18,1. 65]). Average NICU admission costs were estimated at $ 6,165.78 per ART birth and $ 331.85 per non-ART birth. **CONCLUSIONS:** ART births in Colorado have a higher risk of NICU admission compared to non-ART births. The economic impact of NICU admissions is 18.6 times greater among ART births compared to non-ART births.

PIH92

AGING IMPACT OVER THE NATIONAL HEALTH COST IN EXTREMADURA PUBLIC HEALTH EXPENDITURE OF EXTREMADURA IN THE PERIOD 2011-21

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OBJECTIVES: To estimate the effect of demographic component in the evolution of public health expenditure of Extremadura in the period 2011-21 **METHODS:** we estimated health expenditure profiles by age and gender in 2011. Then, we used population projections to calculate future health spending. To obtain those profiles we used data obtained from the information systems of Extremadura. For the primary profile we used the data of frequency by age and gender for this specialised profile obtaining this from the minimum joint data base of the hospital discharge. The profile of the pharmaceutical expenditure by age and gender was obtained from the pharmacy invoice, once the public contribution was deducted. The estimated population in 10 years was obtained from the National Statistic Institute. (INE). **RESULTS:** aging results in a cumulative annual rate for the period 2011-2021 for public health expenditure growth of 5.34%. The aging effect implies a cumulative annual rate in the period 2011-2021 of 6.43% and a decrease of -0.69% due to the range effect (decrease in population). Of all the segments, the largest increase is in the pharmaceutical costs with an accumulated increase of 8.81%, of which 5,65% is in primary attention and 4,78% in specialised attention. **CONCLUSIONS:** According to our results, population growth or aging are determining aspects in public health expenditure increase. Using data directly from each region will explain the differences. In the case of Extremadura, the age factor is very important when increasing the pressure of the public health cost, having a special influence in the field of pharmaceutical expenditure and primary attention.

PIH93

KAZAKHSTAN VERSUS UZBEKISTAN: A REVIEW OF THE DRUG PROVISION SYSTEMS

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OBJECTIVES: As is the case with many of the Commonwealth of Independent Countries (CIS), since the collapse of the Soviet Union, both Kazakhstan and Uzbekistan have been re-building health care provision, and improving access to medications for their population. This study compares the two separate paths the countries have taken, and aims to establish the outcomes achieved by the two systems as well as the direction of future reforms. **METHODS:** Secondary research focused on analysing the systems in place in the two countries, focusing on drug provision. The study assessed the mechanisms in place, drawing comparisons between the two systems, with a particular focus on the outcomes achieved. **RESULTS:** Uzbekistan provides medications free of cost for certain categories of patients, while in Kazakhstan, the government has approved a list of drugs that are provided for free as part of the guaranteed volume of free medical care. In both the cases these fall under an outpatient setting. Although the procurement of drugs is carried out mostly via tenders, Kazakhstan's system involves establishing price ceilings. In Uzbekistan, retail and wholesale margins are controlled. Between 2002-2012, public health expenditure as a percentage of total health expenditure rose from 54% to 58% in Kazakhstan and from 45% to 53% in Uzbekistan. Life expectancy however, increased from 65.9 to 69.6 years in Kazakhstan and from 67.1 to 68.1 years in Uzbekistan. **CONCLUSIONS:** With growing government health expenditure, reflecting the expansion of the health care systems, the countries are likely to increasingly look into containing costs. Given that some pricing mechanism is already in place in Kazakhstan, it may consider implementing tighter pricing regulations, moving closer to those seen in Europe. In Uzbekistan, the government may potentially consider expanding the beneficiary categories while ensuring competiveness within the tendering process.

PIH94

PSYCHOMETRIC PROPERTIES OF THE 16-ITEM SORT FORM VERSION OF THE MENOPAUSE CERVANTES HEALTH-RELATED-QUALITY-OF-LIFE SCALE: THE CERVANTES-SF

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OBJECTIVES: The Cervantes scale is a specific health-related-quality-of-life (HRQoL) questionnaire developed in Spanish women through and beyond menopause. The original 31-item scale was reduced to a less time consuming 16-item sort form: The Cervantes-SF. The aim of this work was to assess the psychometric properties of the Cervantes-SF in a routine clinical sample of perimenopause and postmenopause women. **METHODS:** Peri and postmenopause adult women were recruited in twelve outpatient clinics of Gynecology. All of the patients completed both scales, the 31-items form and the abridged version, however, order of administration was balanced equally to avoid administration bias. A sub-sample of 31 women answered the sort form within 1-2 weeks later (rete-test). Correlation between forms and test-retest reliability were used to test measurement stability. Item analysis, internal consistency reliability, item-total and item-domain correlations and item correlation with the generic Spanish version of the EQ-5D-3L questionnaire were also studied. **RESULTS:** A sample of 215 women [mean age 55 years old (SD=5.3)] was enrolled. Internal consistency was good (Cronbach's a=0.829) but slightly lower than that of the original scale (a=0.895). Dimension reliabilities ranged between a=0.636 (Health) and a=0.923 (Vasomotor). Correlations between extended and reduced subscales was high and significant in all cases (p<0.001), ranging from r=0.790 for Health to r=0.872 for Vasomotor. Correlation between total scores was also high (r=0.885) and no differences were found between mean scores (Effect size=0.353). Short-form total score correlation with EQ-5D utility score was negative and significant (r=-0.487) and also with EQ-5D Health VAS (r=-0.432). Test-retest correlation was high (r=0.886). Completion of Cervantes-SF required half of the time than the original scale. **CONCLUSIONS:** The abridged 16-item Cervantes scale (Cervantes-SF) maintained the original psychometric properties. This version extends 51% of the original length, being faster to apply and making it specially suitable for routine medical practice.

PIH95

PREDICTIONS FOR MEDICAL SUBSIDY ENROLLMENT AMONG YOUNG CHILDREN FROM HIGH-RISK FAMILIES IN TAIPEI

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OBJECTIVES: The current study looks to explore young children from high-risk families in the Taipei City setting. High-risk social welfare intervention was investigated. First, differences between enrollees and non-enrollees for medical subsidy program among high-risk family whose cases were started in 2009 or 2010 will be looked at. Second, the study will try to determine the social welfare intervention's effectiveness in increasing application for medical subsidy program and finding any predictors which may have helped or harmed application for enrollment. **METHODS:** The study sample included under 6 year old children high-risk families (n=199). High-risk family database and medical subsidy database were linked. Differences between high-risk subsidy enrollees (n=87) and non-enrollees (n=112) and effectiveness of a social welfare intervention in increasing subsidy application were investigated in a pre-post analysis of high-risk social welfare intervention. Individual level as well as relative residential level characteristics were explored. **RESULTS:** Medical subsidy enrollment was correlated with younger age at time of a high-risk intervention and relative district level variables. Pre-post comparison suggests high-risk interventions significantly increased subsidy application by 7.4%. Logistic regression indicates older age at time of intervention was associated with 40% less chance of application. **CONCLUSIONS:** The study provides empirical evidence for potential effects of a high risk social welfare intervention on the accessibility to health care. Findings also show where policy makers can improve intervention in order to address the needs children at-risk, especially for different age groups.

PIH96

WHAT FACTORS ARE ASSOCIATED WITH VACCINATION PROGRAMME SUCCESS?

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OBJECTIVES: When the WHO launched the Expanded Programme on Immunisation (EPI) in 1974, <5% of the world's children were vaccinated against polio, measles, diphtheria, tetanus, pertussis and tuberculosis. Nowadays coverage rates are increasing and more vaccines have been added to the programme. This project aims to identify factors associated with successful programmes based on EPI coverage. **METHODS:** The relationship between multiple socio-demographic and economic factors and EPI coverage (primarily obtained from the WHO and World Bank) was investigated using simple linear regression, Principal Component Analysis (PCA) to identify explanatory variables, and finally multiple linear regression analysis. 132 countries with data on self-funded health care programmes were included in the analysis. These were ranked according to Gross National Income (GNI) per capita and lower (L), lower-middle (LM), upper-middle (UM) and upper (U) quartiles were identified. **RESULTS:** Income (GNI/capita) was not significantly associated with achieving high EPI coverage rates. Within the income groups the factors trending with improved EPI coverage included: 5-yr mortality and corruption index in L, sanitary facilities in LM, 5-yr mortality, sanitary facilities, birth-rate and life-expectancy in UM. In U all countries achieved >90% coverage. **CONCLUSIONS:** Identifying simple predictive variables of successful vaccination programmes is complex because of multicollinearity. However, by exploring within homogeneous income groups, it was possible to identify underlying factors related to vaccination programme success. As the core EPI vaccines were introduced 40yrs ago one would expect introduction to have been fully implemented thus reducing the likelihood of a relationship between country income and coverage today, however it could have been expected some time ago. To further explore the relationship between country income and vaccination programme success, one could expand the analysis to include the newer vaccines as soon as coverage information is available for a majority of the countries.

PIH97

PATIENT-REPORTED OUTCOMES (PRO) IN GO/NO-GO DECISION MAKING IN DRUG DEVELOPMENT

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OBJECTIVES: Despite existing examples of the great impact successful integration of PRO science and know-how may have on improving market access, PROs are typically not part of drug development decision making such as go/no-go decisions. The objective of this study is to identify decision making instances in drug development when important go/no-go decision making also could have included PROs but typically weren't. Additionally, search for any strategies and activities that might better enhance the likelihood for senior decision makers also to integrate PRO science and knowhow in drug development decision making. **METHODS:** A literature search was carried out including terms such as PRO, strategy, decision-making, go/no-go decisions, drug development and phases I to IV. **RESULTS:** Typical go/no-go decisions mentioned in the literature include decisions to move a drug candidate from one development phase to the next stage, i. e. from target-to hit to launch decisions. There were very few references found where go/no-go decision-making in drug development also included PROs. Many references also states the necessity to include the patient (e. g. listen to the patient) early on in drug development. However, no concrete suggestions on how to carry out these ambitions in practice were found. **CONCLUSIONS:** There is little research to be found in the literature on go/no-go decision making in drug development where PRO science and knowhow are taken into account. The lack of clear practical guidance and examples on when and how to start inclusion of PROs science and knowhow in go/no-go decision making may be one impediment to their successful inclusion. Perhaps, a best practice rule could be as simple as including a PRO opportunity assessment in phase I-II go/no-go decisions where the feasibility, pros and cons for potentially including PRO in the clinical development program are summarized. At least, a first overview of PROs potential is done.

PIH98

ESTIMATION OF SERUM CALCIUM LEVEL IN PERI AND POSTMENOPAUSAL WOMEN: A COMPARATIVE STUDY

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OBJECTIVES: To estimate the calcium levels in peri menopausal and postmenopausal women and to evaluate the need for calcium supplementation among them. **METHODS:** A prospective study was conducted at gynecology department of a tertiary care hospital for the period of six months to estimate the serum calcium levels among them. Study populations were divided in to perimenopausal and post menopausal group. All the eligible patients were enrolled after obtaining informed consent. Study subjects from both the group were estimated for serum calcium levels to identify if they need calcium supplements. Unpaired T test was performed to find out any significant difference between both groups and pearson's correlation coefficient (r) was applied to assess the relation between age and calcium levels. **RESULTS:** During the study period, 53 of 100 patients enrolled were postmenopausal with the mean age of 60.8±10.47 years and 47 of 100 patients enrolled were perimenopausal with mean age of 44.6±3.54 years. The mean calcium level of 47 perimenopausal women was found to be 9.32±0.55 (reference level: 8.0-11.0 mg/dl) and 8.56±0.54 for 53 postmenopausal women. In post menopausal women there was highly significant drop observed in serum calcium levels with increasing age, compared to peri menopausal women. (CI: 95%, p<0.0001, r: -0.81). **CONCLUSIONS:** The serum concentrations of calcium in majority of our study population were within the normal range. There was a good source of dietary intake of calcium in most of the patients. The levels of calcium were lower in postmenopausal women compared to perimenopausal women. Since there is an negative effect of calcium on the bone mineral density in postmenopausal women, it can be recommended that calcium supplementation can be given as prophylaxis to prevent the long term bone loss and to decrease the risk of fracture and osteoporosis.

PIH99

PATIENT CHARACTERISTICS AND MEDICATION TREATMENT PATTERNS AMONG MEN WITH ERECTILE DYSFUNCTION (ED), LOWER URINARY TRACT SYMPTOMS SECONDARY TO BENIGN PROSTATIC HYPERPLASIA (BPH-LUTS), OR CO-OCCURRING ED AND BPH-LUTS IN THE UK PRIMARY CARE SETTING

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OBJECTIVES: Describe patient characteristics and medication treatment patterns among newly diagnosed cases of BPH-LUTS, ED, and co-occurring ED and BPH-LUTS. **METHODS:** Retrospective cohort study using UK CPRD data on incident BPH-LUTS and incident ED patients indexed between June 2010 and May 2011. Patient records were analysed from 12 months pre-index and up to 24 months post-index. **RESULTS:** The cohort included 8912 men with BPH-LUTS-only, 2589 with an ED diagnosis followed by BPH-LUTS, 8093 with ED-only and 1641 with a BPH-LUTS diagnosis followed by ED, all aged ≥40 years. The majority of BPH-LUTS patients (~90%) were diagnosed and managed within GP practices. Men were diagnosed with BPH-LUTS alone at an older average age (68±11.9 years, IQR=59–77) compared to men in the ED/BPH-LUTS group (67±9.5 years, IQR=61–74, p=0.002). Men were diagnosed with ED at an older average age (65±9.2 years, IQR=59–72) in the BPH-LUTS/ED group compared with ED-only patients (57±9.1 years, IQR=50–64, p<0.001). Time between diagnoses was longer for ED/BPH-LUTS patients (6.8±4.76 years) versus BPH-LUTS/ED patients (5.8±5.10 years). BPH-LUTS and ED treatment patterns were similar for patients with and without co-occurring conditions. Most patients were initially prescribed alpha-blockers (62.9% BPH-only, 65.5% ED/BPH-LUTS) or anticholinergics (14.9% BPH-only, 14.0% ED/BPH-LUTS). For ED, most patients were initially prescribed sildenafil (51.6% ED-only, 49.6% BPH-LUTS/ED) or tadalafil (24.3% ED-only, 26.0% BPH-LUTS/ED). At six months post-diagnosis, ~47% incident BPH-LUTS patients and ~78% ED patients were not on any BPH-LUTS or ED treatment, respectively. **CONCLUSIONS:** Study data suggests >80% of patients are managed as either BPH-LUTS- or ED-only. Average age of BPH-LUTS/ED patients at ED diagnosis suggests patients may suffer from ED years before seeking medical attention (p=0.002). Presence of the co-occurring condition does not appear to impact treatment choice, however, a lower proportion of ED patients initiate treatment after diagnosis, compared with BPH-LUTS patients.

SYSTEMIC DISORDERS/CONDITIONS – Clinical Outcomes Studies

PSY1

PAIN INCIDENCE AND ANALGESIC CONSUMPTION DURING HAEMODIALYSIS SESSIONS: IMPACT ON HEALTH-RELATED QUALITY OF LIFE

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OBJECTIVES: To analyse the incidence of pain and the need of analgesics during haemodialysis sessions, and its impact on Health-Related Quality of Life (HRQoL). **METHODS:** Data about the number of sessions in which 172 patients showed pain and needed analgesics were collected in 2 haemodialysis units in Spain during 3 months. Age, sex, comorbidities, (diabetes and cancer history), time on haemodialysis, pain complaints during haemodialysis sessions, intake of analgesics, opioids and antidepressant drugs, were collected. Generic HRQoL was assessed by means of the computer adaptive test CAT-Health, previously validated, through an iPAD. A negative score means that the HRQoL is worse than that of general population and a positive score, indicates that it is better. **RESULTS:** Mean age (S. D) was 66.87 (13.32), being 44 patients (25.6%) aged over 75 years. 55.8% were male, 34.3% diabetic and 11.6% had cancer history. The median time undergoing haemodialysis was 51.50 months (27.75-84.50). 81 patients (47.4%) had pain during some session. The mean number of haemodialysis sessions with pain was 4.78 (range between 1 and 21 sessions), which represents 12.7% of the total number of sessions. 67 patients (39%) were usually taking analgesics, 37 (21.5%) opioids and 29 (16.9%) antidepressant drugs. Patients taking analgesics showed worse HRQoL: mean (S.