

[15.30], mean EQ-5D value [SD]=0.80[0.13]) shows a lower HRQoL. **Conclusions:** This study provides exposure to SHS and THS brings not only a health burden, but also an economic burden. THS also shows great effect on health problem, thus the social burdens on medical costs should not be underestimated. Government should strengthen smoking control in public areas and strengthen relevant laws.

PIH40

INCIDENCE AND BURDEN OF RECURRENT VAGINITIS AMONG COMMERCIAL INSURED WOMEN IN THE US

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Objectives: To estimate the incidence, healthcare resource utilization and costs associated with recurrent vaginitis among newly diagnosed women. There are few recent estimates of the incidence of recurrent vaginitis, though clinical research suggests it may be as high as 30%. **Methods:** Women with newly diagnosed vaginitis after January 1, 2016 were identified in the IBM MarketScan Commercial Claims and Encounters Database. Women over age 65 or under 18 were excluded, as were women with a vaginitis or malignancy diagnosis in the prior 12 months. Given that vaginitis is usually managed with a short treatment course, recurrence was defined as the presence of a new vaginitis diagnosis at least 30 days post-index. A sensitivity analysis was conducted where recurrence was defined by the presence of a new diagnosis at least 90 days post-index. The primary outcome was healthcare costs, stratified by the presence of vaginitis recurrence. The incidence and recurrence of candidiasis and trichomoniasis were also described. **Results:** A total of 563,810 women met the inclusion criteria (mean age 35.8 years). One-fourth (24.7%) had recurrent vaginitis using the 30 day definition and one-fifth (20.1%) using the 90 day definition. Overall, average annual costs were \$9,500 (SD=\$24,934) among all women but were 1.1x higher for women with recurrent vaginitis. A diagnosis of candidiasis at index was present in 30.2% of all women with newly diagnosed vaginitis; among women with recurrent vaginitis, 35.1% of women had a diagnosis of candidiasis along with the recurrent vaginitis diagnosis. **Conclusions:** This claims-based analysis supports that recurrent vaginitis is common, impacting between one-fourth and one-fifth of women with newly diagnosed vaginitis. While the healthcare costs associated with recurrent vaginitis may be modest, this high incidence requires further research to determine patterns of recurrence, and to identify interventions which improve diagnostic outcomes and reduce the burden of disease.



PIH41

EPIDEMIOLOGICAL DISEASE BURDEN OF ENDOMETRIOSIS BASED ON ROUTINELY COLLECTED HEALTH INSURANCE CLAIMS DATA

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Objectives: Based on clinical estimates, 1 in 10 women is affected by endometriosis in Hungary. Endometriosis may cause infertility. The aim of our study was to determine the epidemiological disease burden of endometriosis. **Methods:** Data were derived from the financial database of the Hungarian National Health Insurance Fund Administration (NHIFA), for the year 2018. Data analysed included annual patient numbers, case numbers and prevalence of care utilisation per 100,000 population according to age groups and sex. The following health insurance treatment categories were included into our study: general practice care, home care, in- and outpatient care, medical imaging, laboratory diagnostics, drugs and medical aids. Patients with endometriosis were identified with the following code of the International Classification of Diseases 10th revision: N80. **Results:** The highest national patient numbers were in outpatient care: in total 7,466 patients, followed by general practice care with a total of 5,302 patients, and the use of pharmaceuticals in total 4,245 patients. Based on patient numbers in outpatient care, prevalence in 100,000 among women was 146.2 patients, while prevalence calculations based on the use of pharmaceuticals resulted in 83.1 patients. Prevalence calculations based on acute inpatient care including hospitalisation resulted in a prevalence of 28.1 patients per 100,000 population. **Conclusions:** Regarding prevalence, a 5.2-fold difference was found between outpatient care, mainly including diagnostic interventions, and acute inpatient care including hospitalisation.



PIH42

RECURRENT VAGINITIS AND CANDIDIASIS: BURDEN AMONG COMMERCIAL INSURED WOMEN WITH TYPE II DIABETES IN THE US

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Objectives: Candidiasis is one of the most common causes of vaginitis and represents a considerable burden among women with diabetes. Candida speciation and potential drug interactions drive diagnostic and treatment decisions. Our objective was to estimate the incidence and healthcare costs associated with recurrent vaginitis



among women with diabetes. **Methods:** The IBM MarketScan Commercial Database was used to identify women ages 18-64 with newly diagnosed vaginitis (index date) after January 1, 2016. Women were required to have a diagnosis of Type II diabetes in the prior year. Women with a diagnosis of prior vaginitis or malignancy were excluded. Due to the fact that vaginitis typically has a short treatment course, recurrence was defined as the presence of a new vaginitis diagnosis at least 30 days post-index; sensitivity analysis was conducted using a 90-day definition. Presence of a candidiasis diagnosis was described both at index and recurrent episodes. Incidence of recurrent vaginitis (with or without candidiasis) was the primary outcome. Secondary outcomes included healthcare costs among women with type II diabetes with and without recurrent vaginitis. **Results:** A total of 563,810 women met the inclusion criteria for newly diagnosed vaginitis, of which 33,880 (6.01%) had a baseline diagnosis of type II diabetes. Among these women, 22.9% had recurrent vaginitis per the 30 day definition and 18.1% using the 90-day criteria. Overall, a candidiasis diagnosis was present at index for 46.6% of women; a candidiasis diagnosis was present among 52.9% of women with recurrent vaginitis. Annual total healthcare costs were \$20,676 and were significantly higher (\$22,130 vs. \$20,244, p=0.0007) for women with recurrent vaginitis. **Conclusions:** Recurrent vaginitis is common and associated with increased morbidity and annual healthcare costs. Candidiasis is often present in both initial and recurrent vaginitis, posing management challenges among women with type II diabetes.

PIH43

SEXUAL BEHAVIOR, USE OF CONTRACEPTIVE METHODS AND PREGNANCY IN YOUNG PEOPLE FROM A POPULATION AFFILIATED IN A HEALTH INSURER COMPANY IN COLOMBIA 2018

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Objectives: describe the average age of sexual life onset from young people and adolescents, the prevalence of contraceptive methods and explore determinants of pregnancy. **Methods:** a retrospective cohort (2014-2018) was followed by a health insurer of the subsidized regime in Colombia. The study sample consisted of 35,214 young people aged 10-24 years living in 21 municipalities of the Colombian Caribbean region. For the social determinants of pregnancy, a multivariate *probit* model was estimated using as explanatory variables, housing area, education, family functionality and sexual behavior. **Results:** 10.3% of women and 14.1% of men had their first sexual encounter before age 14 and 43.5% of women and 37.4% of men began their sex life after age 17. From the young people who claimed to have started their sexual life, 70.9% of the men made use of the condom as a contraceptive method, while the women divided on average 27.2% for the pills and / or injections followed by 16.1% in the use of the subdermal implant. As determinants of pregnancy in young people under 20, it was found that variables such as suspending school years [Yes ($\beta = 0.6$, $p = 0.006$)], being planned with hormonal method [Yes ($\beta = 0.5$, $p = 0.000$)] or start sexual life [Between 10 to 14 years ($\beta = 0.14$, $p = 0.000$)], increase the likelihood of young women becoming pregnant at some time in their life. These results also showed that the schooling of the young [University ($\beta = -0.4$, $p = 0.038$)] and always use condoms in sexual intercourse [Yes ($\beta = -0.5$, $p = 0.042$)] help prevent the pregnancy event from occurring. **Conclusions:** the age of sexual onset establishes a basis on which decision makers should intervene to promote a safe sex life, from use of anticonceptives in young people and thus avoiding unplanned pregnancy.



PIH44

EPIDEMIOLOGICAL DISEASE BURDEN OF FEMALE INFERTILITY BASED ON ROUTINELY COLLECTED HEALTH INSURANCE CLAIMS DATA

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Objectives: Assisted reproductive technologies for the treatment of infertility have shown a continuous increase. Several diseases may lead to infertility; endometriosis may be in the background. The aim of our study was to determine the epidemiological disease burden of female infertility. **Methods:** Data were derived from the financial database of the Hungarian National Health Insurance Fund Administration (NHIFA), for the year 2018. Data analysed included annual patient numbers, case numbers and prevalence of care utilisation per 100,000 population, according to age groups and sex. The following health insurance treatment categories were included into our study: general practice care, home care, in- and outpatient care, medical imaging, laboratory diagnostics, drugs and medical aids. Patients with female infertility were identified with the following code of the International Classification of Diseases 10th revision: N97. **Results:** The highest national patient numbers were found in outpatient care: in total 30,112 patients, followed by the use of pharmaceuticals: in total 18,522 patients and laboratory diagnostics with 14,765 patients. Based on patient numbers in outpatient care, prevalence in 100,000 among women was 589.6 patients, while prevalence calculations based on the use of pharmaceuticals resulted in 362.7 patients. Prevalence calculations based on acute inpatient



care including hospitalisation resulted in a prevalence of 178.6 patients per 100,000 population. **Conclusions:** Regarding prevalence, a 3.3-fold difference was found between outpatient care, mainly including diagnostic interventions, and acute inpatient care including hospitalisation. Diseases associated with female infertility may significantly affect the health of the patient the treatment of which is necessary to help fulfil the reproductive wishes of patients.

PIH45

COST-EFFECTIVENESS OF A CARE PUBLIC PROGRAM FOR PREGNANT WOMEN WHO HAD THEIR DELIVERY IN A THIRD - LEVEL - COMPLEXITY HOSPITAL AT COLOMBIA

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Objectives: To estimate the cost-effectiveness of the "Buen Comienzo" program gestation strategy, in its Family Environment modality, compared to conventional prenatal control in a third - level - complexity hospital at Medellín, 2015. **Methods:** A cost-effectiveness analysis was carried out, comparing the costs and health outcomes of two care and accompaniment modalities to pregnant mothers at the city of Medellín. The study was developed in three moments. First, the program's effectiveness was established on a treatment and a control group. Second, a cost analysis was carried out, from the perspective of the Colombian Health System, including only direct costs. Third, a cost-effectiveness analysis was performed, based on in the average and incremental cost and effectiveness ratios of the alternatives. Deterministic and probabilistic sensitivity analyses were performed. **Results:** The treatment group happens to be the more cost-effective in reducing low birth weight and premature pregnancy than the control group. The cost for the treatment group were between \$ 3,316,715 and \$ 3,550,836 Colombian pesos (1.208 - 1.294,3 US) per Low birth weight and pre-term pregnancy avoided. It is compared to values between \$ 1,187,910 and \$ 1,316,333 (433 - 479 US) corresponding to the control group. The proportion of low birth weight and premature delivery was lower in the treatment group than in the control group. **Conclusions:** The "Buen Comienzo" program in its Family Environment modality is a potentially cost- effectiveness strategy for early child care at the city of Medellín. It is recommended that the results obtained could be cost-effectiveness indicators to develop allocating-resources mechanisms.



PIH46

COSTS AND OUTCOMES ASSOCIATED TO POTENTIALLY INAPPROPRIATE DRUG PRESCRIBING DETECTED BY ALGORITHM: PRELIMINARY RESULTS FROM THE MAPT STUDY

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Objectives: Drug prescribing is an essential component in the management of pathologies and functional capacity of older patients. However, some medicines may be dangerous for patients. The potentially inappropriate drug prescribing (PIDP) among older patients represents a significant cause of morbidity. The aim of this study was to compare the clinical characteristics and the healthcare costs of elderly patients according to potentially inappropriate drug prescribing. **Methods:** Analyses were conducted using data from the MAPT (Multidomain Alzheimer Preventive Trial) study. An algorithm was constructed to detect potentially inappropriate drug prescribing and was based on different explicit criteria: the European List of potentially inappropriate medications, the STOPP and START tools version 2, Alert and Mastering of Iatrogenesis indicators (AMI) of the French High Authority for Health (HAS), the market withdrawals and the Summary of Product Characteristics (SPC) for contraindications. We performed the cost analysis from the French national health insurance perspective. The costs are reported as means and bootstrap 95% confidence intervals. **Results:** At baseline, the algorithm analysed prescriptions from included patients (N=1525 aged 75.3±4.4 years; 64% women (N=978)). Among the included patients, 80.4% had PIDP (N=1226). The patients with PIDP (versus without PIDP) didn't differ regarding sex, education levels, Fried frailty phenotype, intrinsic capacity domains (cognitive, psychological, locomotion and vitality). The patients with PIDP were slightly older (75.3 vs 74.8, p=0.028), had more prescribed drugs (5.4 vs 2.0, p<0.001), and more comorbidities (p= 0.029) (Charlson index) than those without PIDP. The average healthcare costs per patient over 6 months were 723€ [636€; 831€] for patients with PIDP and 658€ [540€; 788€] for patients without PIDP. **Conclusions:** Participants did not differ, as a function of PIDP, in terms of functional capacity and frailty, but differed regarding co-morbidities. These results have to be confirmed by a multivariate analysis on longitudinal data.



PIH47

DEMENTIA SEVERITY AND OPIOID USE IN LONG-TERM CARE NURSING HOME RESIDENTS

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Objectives: National information on opioid use in long-term care nursing homes is unknown. We examined the temporal trends in opioid use and the association of



dementia severity with opioid use in long-term care nursing home residents. **Methods:** This retrospective study used 20% national Minimum Data Set and Medicare claims from 2011-2017. For primary analysis, we selected long-term care residents with moderate to severe pain (n=16,855). In a secondary analysis, we included nursing home residents who had an emergency room visit for a fracture (n=12,860). Among nursing home residents with moderate to severe pain, association of dementia severity with any, prolonged (>90 days) and high-dose (≥90 morphine milligram equivalent [MME] dose/day) opioid use was evaluated using logistic regression. Among nursing home residents with a fracture, we determined if they received at least one prescription of an opioid within 7 days after emergency room discharge. We controlled for patient's sociodemographic and clinical characteristics, and nursing home characteristics. **Results:** Opioid use declined from 47.8% in 2012 to 40.3% in 2017 (p=0.0007) in residents with severe dementia with a fracture. Among nursing home residents with moderate to severe pain (n=16,855), 72.7% used at least one opioid, 37.3% used for over 90 days and 4.1% used high-dose opioids. Severe dementia reduced the odds of any (66.6% vs. 76.4%; OR=0.85, 95%CI=0.79-0.91), prolonged (30.5% vs. 41.9%; OR=0.91, 95%CI=0.82-0.99) and high-dose (2.1% vs. 5.7%; OR=0.55, 95%CI=0.44-0.70) opioid use. After fracture, moderate (40.7% vs. 48.9%; OR=0.70, 95%CI=0.63-0.78) and severe (43.5 vs. 48.9%; OR=0.80, 95%CI=0.73-0.88) reduced opioid use. **Conclusions:** Severe dementia reduces opioid use and may reflect under-recognition and under-treatment of pain in this population. To improve quality of care, systemic efforts from healthcare professionals, nursing home administrators and policymakers are needed to evaluate opioid use in nursing home residents with dementia.

PIH48

DIFFERENTIAL PRESCRIPTION PATTERNS OF DROSPIRENONE-CONTAINING COMBINED ORAL CONTRACEPTIVES IN EUROPE AND NORTH AMERICA - INSIGHTS FROM THE INAS-FOCUS STUDY

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Objectives: The INAS-FOCUS registry was conducted as a Post-Authorization Safety Study, investigating the cardiovascular risk of a new combined oral contraceptive (COC) containing Drospirenone/Ethinylestradiol plus metafolin (DRSP/EE+) in comparison to other established COCs (oCOC). A secondary objective was to analyze the drug utilization pattern under routine medical conditions. **Methods:** Large, prospective, controlled, non-interventional, long-term cohort registry following users of DRSP/EE+ and oCOC for up to seven years. The registry did not interfere with the physicians' prescribing behavior and no medical inclusion/exclusion criteria were applied. Participants were recruited via a network of COC-prescribing physicians in Russia, Ukraine, Canada and the United States of America (US). Demographics, medical and gynecological history were collected at baseline. Follow-up included collection of contraceptive utilization history and identification of adverse events every 6-12 months via an active surveillance approach employing self-administered questionnaires. Patient-reported clinical outcomes of interest were validated via health care professionals. **Results:** The registry included 82,780 women, comprising 7,649 users of DRSP/EE+, 13,034 users of DRSP/EE- (DRSP/EE without folate) and 62,098 users of oCOC-. Prescription patterns in Europe showed little overlap with North America. In Russia/Ukraine, DRSP/EE+ users comprised 17.4% of the baseline study population, compared to only 4.1% in the US/Canada. North American study participants tended to be prescribed COCs containing Norethindrone (NETA)- (47.0%), Norgestimate (NGM)- (20.5%) and Levonorgestrel (LNG)- (8.3%), whereas the most commonly prescribed progestogens in Europe were DRSP (53.7%), oCOC (44.5%, mostly DNG) and LNG- (1.8%). **Conclusions:** INAS-FOCUS was a long-term, active surveillance registry based on primary data collection methods. Results showed a large discrepancy in COC utilization patterns between Europe and North America; despite LNG being recommended as first-line therapy, only 8.3% of North American study participants and 1.8% of European study participants were prescribed an LNG-containing COC. NETA, NGM (North America) and DRSP (Europe) were more commonly prescribed.



Individual's Health - Health Policy & Regulatory

PIH49

HEALTH EXPENDITURE GROWTH FROM 2001 TO 2017 FOR CHILDREN WITH SPECIAL HEALTH CARE NEEDS: DECOMPOSITION INTO CONDITION PREVALENCE, SERVICE VOLUME AND PRICE OF CARE

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Objectives: Children with Special Health Care Needs (CSHCN) have markedly increased health care expenditure relative to children without special needs. This study aims to understand the contributors to growth in expenditure per CSHCN. **Methods:** Health expenditure was classified by types of care (office-based visits, ED visits, inpatient visits, outpatient visits, prescribed medicines, dental visits, and home health) and types of condition (mental, physical and well person care). Growth in average expenditure per child was decomposed by prevalence, volume and price. Retrospective data were used from the US Medical Expenditure Panel Survey (MEPS), years 2001 to 2017. **Results:** CSHCN accounted for 20% of the child population, 50% of

