OBJECTIVES: Evaluate comparative effectiveness and economic impacts of banked donor milk for premature infants to support evidence-based decision-making for implementing a public milk bank managed by a banked milk in the province of Quebec.

METHODS: A systematic review of the literature was performed to identify clinical and economical characteristics of banked donor milk compared for formulas for reducing complications in preterm or very low birth weight (VLBW) infants. Epidemiology and costs of these complications were obtained from provincial databases (Régie de l’Assurance Maladie du Québec, Ministère de la Santé et des Services Sociaux) to estimate the economic impact of using banked donor milk in this vulnerable population. Milk bank budget was estimated in the context of the Quebec blood bank.

RESULTS: Evidence available indicates that the major benefit associated with the use of banked donor milk compared to formula in premature or VLBW infants is a reduction of the risk of necrotizing enterocolitis (NEC). Among the 2007 data, the incidence rate of NEC in the province of Quebec, Canada, was of 70 cases during a one-year period between 2008 and 2009 which resulted in total direct costs of 2010US$426,128 for the Quebec healthcare system. It is estimated that the use of banked donor milk in a neonatology would reduce the number of NEC cases by 48 and the number of fatalities by 12 annually, resulting in potential savings. It is proposed that implementing a public milk bank in a blood bank setting would result in economic efficiencies.

CONCLUSIONS: Findings of the present study indicate that the clinical benefits of banked donor milk compared to formula in premature infants justifying the incidence of NEC in premature infants. Implementing a public milk bank in a blood bank setting could be clinically and economically beneficial.

PIH5 RISK OF HIP AND SUBTROCHANTERIC OR DIAPHYSEAL FEMORAL FRACTURES IN ALENDRONATE USERS

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OBJECTIVES: The aim of the study was to evaluate the risk of hip fracture and the risk of subtrochanteric or diaphyseal femoral fracture in alendronate users for short and long term followup compared to non-users. The study provided new data that will help decision makers better understand the economic impact associated with the inappropriate prescriptions of BZDs.

METHODS: A systematic review of the literature was performed to identify clinical and economical characteristics of the study. Among the 2007 data, the incidence rate of NEC in the province of Quebec, Canada, was of 70 cases during a one-year period between 2008 and 2009 which resulted in total direct costs of 2010US$426,128 for the Quebec healthcare system. It is estimated that the use of banked donor milk in a neonatology would reduce the number of NEC cases by 48 and the number of fatalities by 12 annually, resulting in potential savings. It is proposed that implementing a public milk bank in a blood bank setting could be clinically and economically beneficial.

CONCLUSIONS: Findings of the present study indicate that the clinical benefits of banked donor milk compared to formula in premature infants justifying the incidence of NEC in premature infants. Implementing a public milk bank in a blood bank setting could be clinically and economically beneficial.

PIH5 POTENTIALLY INAPPROPRIATE MEDICATION USE AMONG OLDER ADULTS IN THE UNITED STATES IN 2007

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OBJECTIVES: To determine the prevalence of potentially inappropriate medication (PIM) use in older adults in 2007 and compare it with those found in 1996, and to identify risk factors for PIM use.

METHODS: Primary data source was the 2007 Medical Expenditure Panel Survey. This is a nationally representative survey of the U.S. community-dwelling population. Study subjects were those respondents aged 65 or older. A retrospective cohort study was conducted. PIMs were identified according to the Zhan criteria. Prevalence rates of the 33 PIMs utilization by medications and respondents' characteristics were determined. Risk factors for PIM use were examined using logistic regression after controlling for confounding factors.

RESULTS: The 33 PIMs use on the Zhan list declined between 1996 and 2007. In 2007, 13.8% (95% confidence interval [CI], 12.5%-15.2%) of the elderly or 5.4 million older adults received at least 1 of the 33 PIMs; and 1.5% (95% CI, 1.1%-2.0%) used at least 1 of the 11 PIMs that should always be avoided. The most commonly misused medications were propoxyphene, amitriptyline, antihistamines, diaze- pam, muscle relaxants, gastrointestinal antispasmodics, and indomethacin. High-risk older patients for PIM use included women, people in the South, persons receiving more prescriptions, and those who rated their health status as fair or poor. Comparing to data in 1996, the prevalence of PIMs decreased from 6.9 million to 5.4 million although the top three PIMs remained propoxyphene, amitriptyline and promethazine. The older people who took at least 1 of the 11 PIMs declined from 0.84 million to 0.59 million.

CONCLUSIONS: The 33 PIMs use in older Americans decreased but was still prevalent in some subgroups and for some drugs. Utilization review for elderly population is still needed.

Individual’s Health – Cost Studies

PIH6 THE ECONOMIC IMPACT ATTRIBUTABLE TO THE INAPPROPRIATE PRESCRIPTION OF BENZODIAZEPINES IN THE ELDERLY LIVING IN THE COMMUNITY

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OBJECTIVES: The purpose of this study is to describe health service use and related costs associated with potentially inappropriate benzodiazepine use (PIB) among older adults living in the community in the province of Quebec, Canada.

METHODS: The cohort consisted of a representative sample (n = 2494) of Quebec’s community-dwelling elderly (~65 years of age) respondents of the ESA survey (Survey on older adult’s mental health, 2006). The cost analysis was carried out from a healthcare system perspective and the definition of the PIB of benzodiazepines was based on Beers’ criteria (ick, 2003). Multivariate regression analyses were carried out to assess the influence of PIB of BZD on healthcare costs in the elderly.

RESULTS: 30% (n = 744) of participants were using BZD and 45% (n = 331) of the users reported at least one potentially inappropriate benzodiazepine (BZD) use. In 2007, 13.8% (95% confidence interval [CI], 12.5%-15.2%) of the elderly or 5.4 million older adults received at least 1 of the 33 PIMs; and 1.5% (95% CI, 1.1%-2.0%) used at least 1 of the 11 PIMs that should always be avoided. The most commonly misused medications were propoxyphene, amitriptyline, antihistamines, diaze- pam, muscle relaxants, gastrointestinal antispasmodics, and indomethacin. High-risk older patients for PIM use included women, people in the South, persons receiving more prescriptions, and those who rated their health status as fair or poor. Comparing to data in 1996, the prevalence of PIMs decreased from 6.9 million to 5.4 million although the top three PIMs remained propoxyphene, amitriptyline and promethazine. The older people who took at least 1 of the 11 PIMs declined from 0.84 million to 0.59 million.

CONCLUSIONS: The 33 PIMs use in older Americans decreased but was still prevalent in some subgroups and for some drugs. Utilization review for elderly population is still needed.

Individual’s Health – Cost Studies

PIH6 THE DEFINITION AND PREVALENCE OF PSYCHOTROPIC POLYPHARMACY IN MEDICAID CHILDREN AND ADOLESCENTS

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OBJECTIVES: This study evaluated the prevalent use of psychotropic polypharmacy and characterized how well the cross-sectional operational definitions of polypharmacy used in published pediatric studies accurately identify patients prescribed long-term treatment.

METHODS: The prevalence of psychotropic polypharmacy was defined as receiving ≤ 14 days, ≥ 30 days, or ≥ 90 days of overlapping psychotropic prescription fills. Descriptive analysis was used to compare the prevalence of polypharmacy based on Multistate Medicaid data involving children and adolescents 6 to 18 years of age. A sensitivity analysis was conducted to further explore the extent to which the cross-sectional operational definitions of polypharmacy used in published literature identified patients who were prescribed psychotropic combinations on a long-term basis.

RESULTS: Analysis of Multistate Medicaid data revealed that 218,696 children and adolescents filled at least one psychotropic prescription in 2005. Of these patients, 22.52% received psychotropic combinations for ≥ 14 consecutive days. The observed rate of polypharmacy dropped to 19.13% for 30 days overlap criterion and to 16.44% with 60 days overlap criterion. 25%-60% of patients with polypharmacy in cross-sectional definitions were likely receiving two or more psychotropic agents on a short-term basis. Furthermore, cross-sectional definitions failed to identify a 40% to 70% of patients with polypharmacy (~60 day overlap).

CONCLUSIONS: The long-term use of psychotropic polypharmacy in Medicaid children and adolescents in this study appeared modest. The comparison between our observations and previous studies illustrate the considerable problems that arise when comparing rates of polypharmacy across studies with inconsistent operational definitions.
Gibbs205,452.58 (US $141,691.44). CONCLUSIONS: This study showed that average costs of maternity services were consistently higher at hospitals. The lower health facilities were under utilized.

PIH10 HEALTH CARE RESOURCE UTILIZATION AND COSTS IN FEMALES WITH NEWLY DIAGNOSED HEAVY MENSTRUAL BLEEDING: AN EMPLOYER’S PERSPECTIVE
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OBJECTIVES: Cost burden of menorrhagia or heavy menstrual bleeding (HMB) has not been well documented. This study evaluated the healthcare resource utilization, work productivity loss, and costs associated with newly diagnosed HMB using an employer’s perspective. METHODS: An analysis was conducted of health insurance claims, 1998-2009 from 40 self-insured companies across the US. Women aged 18-52 years with ≥2 diagnosis claims of HMB (ICD-9: 626.2, 627.0) within 6 months as of the date of the first HMB diagnosis (“index date”) and continuously enrolled for ≥6 months prior to the index date were matched 1:1 with controls (no-HMB) based on exact matching factors and propensity scores. Exclusion criteria were diagnosis of cancer, pregnancy/delivery, clinician-identified ureter conditions, endometrial ablation or hysterectomy, diagnosis of organic causes of HMB, and dispensing of anticoagulant medications. All-cause healthcare resource utilization and costs were compared between the HMB and no-HMB control cohorts using statistical methods accounting for matched study design. RESULTS: The HMB and no-HMB cohorts (31,308 women in each group) were well-matched with respect to age, year of index date, region, comorbidities, and baseline characteristics. Following up-HMB patients had significantly higher all-cause resource utilization than no-HMB patients (hospitalization: incidence rate [IR] = 2.68, 95% CI 2.59-2.76, p < .0001; emergency room: IR = 1.36, 95% CI 1.33-1.40, p = .0001; outpatient: IR = 1.29, 95% CI 1.28-1.29, p < .0001). Average annualized (per-patient-per-year) all-cause healthcare and productivity loss costs were also significantly higher for HMB patients compared to the no-HMB group ($6,275 vs $3,740, cost difference $2,535, p < .0001). Costs associated with HMB claims represented 50% ($1,261) of the all-cause cost difference between the two cohorts. The most prevalent initial treatment following diagnosis of HMB was endometrial ablation (45% of patients). CONCLUSIONS: In this large matched-cohort study, a diagnosis of HMB was associated with significantly higher healthcare resource utilization and costs.

PIH11 COST ANALYSIS OF TOTAL PARENTERAL NUTRITION IN THE NEONATAL AND MATCHED-COHORT STUDY, A DIAGNOSIS OF HMB WAS ASSOCIATED WITH SIGNIFICANTLY...

Parenteral nutrition (PN) is critical for neonatal care and for infants who are unable to tolerate oral or enteral feeding during this important growth period. PN care in newborns is complex and involves a multidisciplinary approach. This study aims to assess the total cost of compounded PN therapy for neonates, infants, and children. METHODS: A cost-model was constructed to assess total costs of PN therapy including prescribing, compounding, and administration. This tool was piloted in 3 Belgian hospitals, with a total of 763 patients and 7,488 compounded bags annually. Data were collected via literature review and face-to-face interviews in 12 hospitals in 4 countries (Belgium, France, Germany, and UK) about resource-utilization and costs. The variable and fixed costs such as ingredients, consumables, equipment, staff-time were included. Overall costs of hospital PN-therapy were calculated from expenditures. Staff-time spent preparing PN was measured to determine personnel costs; bottom-up costing was used to assign a monetary value using published list-prices. RESULTS: In these hospitals, 93% of all PN bags were compounded in hospital (either in the pharmacy or on the ward), and 7% were industrially manufactured. The daily total cost of one bag of in-hospital compounded PN equaled 65.68 (weighted average by PN days) per neonate across all weight groups. Consumables accounted for 25% of total costs, ingredients 21%, equipment 4% and wages 50%, 22 minutes of staff-time per PN was uniquely attributable to compounding, not including time required for Iraq and supplementing PN. Average per-bag and per-patient costs (including materials and staff-time) were stratified by infants weighing less than versus greater than 2,500 grams, and 4,2 days among all other infant stays. LBW/pre-term infant stays resulted in costs of more than $9.7 billion, or approximately 45% of all costs for all infant stays, and nearly 1.7 times the costs of uncomplicated newborn stays. Patients with a birth weight less than 2,500 grams had costs that were approximately 3.9 times greater than costs for patients with a birth weight greater than 2,500 grams [mean [SE] $23,382 [$2,120] versus $5,951 [830] among patients with a birth weight less than versus greater than 2,500 grams, respectively). CONCLUSIONS: While LBW/pre-term infant stays represent a small percentage of all infant hospitalizations, they accrue almost half of all inpatient treatment costs among infants.

PIH13 THE COST-EFFECTIVENESS OF THE LEVONORGESTREL-RELEASING INTRAUTERINE SYSTEM ( LNG-IUS, MIRENA®) FOR THE TREATMENT OF HEAVY MENSTRUAL BLEEDING IN THE UNITED STATES
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OBJECTIVES: To evaluate the cost-effectiveness of the LNG-IUS compared with other therapies for the treatment of heavy menstrual bleeding (HMB) in the United States (US). METHODS: A microsimulation model examined the five-year treatment experiences of 1,000 hypothetical women with HMB from a US payer perspective. Women who could begin treatment (current user) were categorized into four oral agents (generic combined oral contraceptives (COCs), branded COCs, oral progesterones, or tranexamic acid) or surgery (endometrial ablation or hysterectomy). Women who failed a nonsurgical treatment line could switch to another nonsurgical or surgical therapy (up to three non-surgical treatment lines were allowed). Women who failed all non-surgical treatment lines had the option of surgery as a fourth-line treatment. Treatment success was defined as menstrual blood loss 80 milliliters per menstrual cycle (data were obtained from recent literature). Women could also experience amenorrhea, unintended pregnancy, or discontinuation. RESULTS: Initiating treatment after five years with LNG-IUS results in fewer hysterectomies and is a cost-saving line of treatment compared to HMB compared with strategies beginning with oral therapies or surgery.

PIH14 PROJECTING THE POTENTIAL COST-EFFECTIVENESS OF UNIVERSAL ACCESS TO MODERN CONTRACEPTIVES IN UGANDA
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OBJECTIVES: To determine the recent prevalence of and barriers to modern contraceptive use among women of reproductive age in Uganda by using a hypothetical New Contraceptive Program (NCP) from both societal and governmental perspectives. METHODS: A Markov model was developed to compare the NCP to the status quo or Current Contraceptive Program (CCP). The model followed a hypothetical cohort of 15-year old girls over a lifetime. The model was developed to compare the NCP to the status quo or Current Contraceptive Program (CCP). The model followed a hypothetical cohort of 15-year old girls over a lifetime. Two years of treatment with LNG-IUS was less costly any treatment associated with hospitalizations among LBW and pre-term infants in the United States. METHODS: This study used data from the 2008 Healthcare Cost and Utilization Project Nationwide Inpatient Sample. Hospital stays were selected for inclusion if the patient was aged ≥1 year old. Stays were broken into three categories: LBW/pre-term stays (any diagnosis with an ICD-9-CM code of 764.xx, 765.xx, and V21.3x), uncomplicated newborn stays (primary diagnosis with an ICD-9-CM code from V30 and V39.2), and all other infant stays. LBW/pre-term stays were stratified by infants weighing less than or greater than 2,500 grams. Study measurements were weight and included demographics, hospital characteristics, length of stay (LOS), and costs. RESULTS: In 2008 there were 499,473 stays for LBW/pre-term infants, representing 10% of all infant stays. The average LOS for LBW/pre-term infants was 11.9 days, versus 2.3 days among infants with an uncomplicated newborn stay, and 4.2 days among all other infant stays. LBW/pre-term infant stays resulted in costs of more than $9.7 billion, or approximately 45% of all costs for all infant stays, and nearly 1.7 times the costs of uncomplicated newborn stays. Patients with a birth weight less than 2,500 grams had costs that were approximately 3.9 times greater than costs for patients with a birth weight greater than 2,500 grams [mean [SE] $23,382 [$2,120] versus $5,951 [830] among patients with a birth weight less than versus greater than 2,500 grams, respectively). CONCLUSIONS: While LBW/pre-term infant stays represent a small percentage of all infant hospitalizations, they accrue almost half of all inpatient treatment costs among infants.

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