

and gender, including physician visits, pain-clinic visits, neurology-clinic visits, and ED visits. In the 75-84 years age group, frequency of utilization was higher by 22%, 39%, 45% and 48% for these health care resources, respectively. **CONCLUSIONS:** Epidemiology of HZ in Israel is similar to that reported for other countries. This illness presents a burden on the elderly population and is related with increased resource utilization.

#### PIH17

##### COST-BENEFIT ANALYSIS ON THE LONG TERM EFFECTS OF IN VITRO FERTILIZATION (IVF) IN GREECE: AN ANALYSIS BASED ON A LIFETIME MODEL

Fragoulakis V, Maniadaakis N  
National School of Public Health, Athens, Greece

**OBJECTIVES:** To quantify the economic effects of an in-vitro-fertilization (IVF) born persons in terms of productivity gains and net tax revenues for the state in Greece. **METHODS:** A mathematical model was developed to assess the lifetime productivity and transactions between an individual and the governmental agencies. The model distinguishes amongst three periods in economic life cycle: 1) early life, when the government primarily contributes resources through child tax credits, health care, and educational expenses; 2) employment, when individuals begin returning resources through taxes; and 3) retirement, when the government expends additional resources on Social Security and old-age programs. Cost of life birth with IVF was based on a modification of a previous published model developed by the authors. All outcomes were discounted at a 3% discounting rate. The data inputs, namely the economic or demographic variables, were derived from National Statistical Secretariat of Greece and other relevant sources. To deal with uncertainty, bias corrected uncertainty intervals (UI) was calculated based on 5000 Monte Carlo simulations. In addition, to examine the robustness of our results, other one-way sensitivity analyses were also employed. **RESULTS:** The cost of IVF per birth was estimated at €17,078 (95%UI: €16,350-€17,805). The average projected income generated by an individual throughout his productive life, was €667,651 (95%UI: €538,897-€762,862). In addition, his life tax contribution was estimated at €200,295 (95%UI: €168,669-228,670), while the discounted governmental expenses for elderly and underage individuals were at €36,570 (95%UI: €33,614-€40,463). Hence, the net present value of IVF was €163,726 (95%UI: €124,533-€192,215) representing a 547% net return on investment. Results remained constant under various assumptions for the main model parameters. **CONCLUSIONS:** State-funded IVF represents good value for money in the Greek setting, as it has positive tax benefits for the government, notwithstanding its beneficial psychological effect for infertile couples and the overall productivity gains.

#### PIH18

##### CLINICAL EFFICACY AND COST-EFFECTIVENESS OF ADDITIONAL IMMUNOTHERAPY IN EARLY-ONSET NEONATAL INFECTIONS

Soldatova I<sup>1</sup>, Pankratyeva L<sup>2</sup>, Degtyareva M<sup>2</sup>, Volodin N<sup>3</sup>  
<sup>1</sup>Research Center for Clinical and Economic Evaluation and Pharmacoeconomics, Russian National Research Medical University, Moscow, Russia, <sup>2</sup>Russian National Research Medical University, Moscow, Russia, <sup>3</sup>Scientific Clinical Centre of Pediatric Hematology, Oncology and Immunology, Moscow, Russia

Infections are a major contributor to neonatal mortality and morbidity levels all over the world. **OBJECTIVES:** To assess clinical efficacy and cost-effectiveness of additional immunotherapy in neonates with severe infections in neonatal intensive care unit (NICU). **METHODS:** We observed 375 neonates (gestational age (GA) 25-41 weeks) with severe early-onset infections in NICU. Fifty-two neonates with hypogammaglobulinemia were treated with normal human immunoglobulin (NHI), 85 newborn infants with lymphopenia were treated with human interleukin 2 (HI2), 94 neonates with low mitogen-induced interferon- $\alpha$  production treated with interferon- $\alpha$ 2b. A total of 144 were under standard treatment without additional immunotherapy. **RESULTS:** Administration of NHI resulted in reduction of NICU length of stay and mortality level in cases of septic shock - 7.1% [0.2%; 34%] vs 40% in a similar group without immunosubstitutive therapy ( $p < 0.05$ ). Administration of interferon- $\alpha$ 2b reduces hospital length of stay and mortality rates ( $g = 0.009$ , OR = 0.21 [0.05; 0.67], RR = 0.26 [0.07; 0.69], NNT=8 [4; 29]). Administration of HI2 reduces NICU length of stay and mortality rates from severe infection ( $g = 0.047$ ; OR=0.36 [0.13; 0.98]; RR=0.41 [0.17; 0.98]; NNT=9 [4; 214]). Administration of immunotherapy in early-onset neonatal infections leads to substantial cost savings up to € 168,896 per patient in case of NHI treatment, € 60,910 per patient in case of HI2 treatment and € 69, 247 per patient in case of interferon- $\alpha$ 2b administration. **CONCLUSIONS:** Additional immunotherapy in early-onset neonatal infections is a cost-effective intervention that allows to reduce mortality rates and save money.

#### PIH19

##### COST EFFECTIVENESS OF PREMALEX (ESCITALOPRAM) COMPARED TO SERTRALINE FOR TREATMENT OF PMDD (PREMENSTRUAL DYSPHORIC DISORDER), BASED UPON THE CGI-S

Björk-Linné A<sup>1</sup>, Borg S<sup>2</sup>, Eriksson E<sup>3</sup>, Velin B<sup>1</sup>  
<sup>1</sup>H. Lundbeck AB, Helsingborg, Sweden, <sup>2</sup>The Swedish Institute for Health Economics, Lund, Sweden, and Faculty of Medicine, Lund University, Lund, Sweden, <sup>3</sup>University of Gothenburg, Gothenburg, Sweden

**OBJECTIVES:** To investigate the cost effectiveness of intermittent treatment of PMDD (premenstrual dysphoric disorder) with Premalex (escitalopram) 20 mg compared with sertraline 50-100 mg based upon the Clinical Global Impressions - Severity (CGI-S), from a societal perspective. **METHODS:** We identified one randomised placebo controlled trial with sertraline and one with Premalex, reporting the CGI-S as an outcome. Using placebo, the CGI-S was used to make an indirect effect comparison between Premalex and sertraline. The CGI-S was translated into QALY weights, through the proportion of time spent with a high degree of the anxiety/depression in the EQ-5D. Costs of health care visits were estimated using a

local treatment pattern survey among GPs and gynaecologists. Official drug prices were used. A Premalex dose of 15 mg, the average of 10 and 20 mg, was assumed as it is stated in the SPC text that many of the patients will benefit from 10 mg. 37-75% lower drug costs were used in years 2-3 due to expected generic competition. Indirect costs were estimated using a published international study of the effect of PMDD on sick leave and productivity. A societal perspective was taken over a 3-year time frame. **RESULTS:** During the first year, Premalex treatment increased drug costs (SEK 1599), partly offset by indirect costs saving (SEK 1413), resulting in a total cost of SEK 186, compared to sertraline. An estimated gain of 0.0044 QALYs with Premalex compared to sertraline gave an incremental cost per QALY gained of SEK 42200 (EUR 4700). In the next 2 years, drug costs were more than offset by indirect costs saving, leading to an overall gain of 0.0132 QALYs and a savings of SEK 1600 per three years with Premalex compared to sertraline. **CONCLUSIONS:** Treatment of PMDD with Premalex is cost effective compared to sertraline, from a societal perspective.

#### PIH20

##### COST-EFFECTIVENESS OF SUPPLEMENTAL N-3 IN TOTAL PARENTERAL NUTRITION THERAPY IN THE ITALIAN, FRENCH, GERMAN AND UK CONTEXT: A DISCRETE EVENT SIMULATION MODEL

Pradelli L<sup>1</sup>, Eandi M<sup>2</sup>, Povero M<sup>1</sup>, Mayer K<sup>3</sup>, Heller AR<sup>4</sup>, Muscaritoli M<sup>5</sup>  
<sup>1</sup>AdRes HE&OR, Turin, Italy, <sup>2</sup>University of Torino, Torino, Italy, <sup>3</sup>Justus-Liebig University Giessen, Giessen, Germany, <sup>4</sup>Universitätsklinikum Carl Gustav Carus at the Technical University Dresden, Dresden, Germany, <sup>5</sup>University La Sapienza, Roma, Italy

**OBJECTIVES:** A very recent Meta-Analysis shows that the addition of Omega-3 fatty acid in standard Total Parenteral Nutrition (TPN) is associated with reductions in infection rate, ICU, and overall lengths of stay (LOSs) for both Intensive Care Unit (ICU) and elective surgery patients. Aim of this study is the CE analysis of its use in these patient populations, as compared to standard lipid emulsions. **METHODS:** Within a Discrete Event Simulation (DES) scheme, a patient-level simulation model was developed, with the inclusion of baseline outcomes rates from the Italian ICU patient population and from published literature; comparative efficacy data for standard and Omega-3 fatty acids-based regimens from the meta-analysis of published randomized clinical trials (conducted on 23 studies with a total of 1502 patients), and country-specific cost data. Clinical outcomes included in the model are death rates, nosocomial infection rates, and ICU/hospital LOSs. Costs are referred to Italian, French German and UK health care systems. Probabilistic and deterministic sensitivity analyses are undertaken to test results' reliability. **RESULTS:** Omega-3 fat emulsions emerged as more effective on average than standard TPN both in ICU and in non-ICU patients: in all the four national contexts here considered, reduced mortality rates, infection rates, and overall LOSs yield a lower total cost per patient. Treatment costs are completely offset by the reduction in hospital stay costs and antibiotic costs. Sensitivity analyses confirmed the robustness of these findings. **CONCLUSIONS:** These results indicate that the addition of Omega-3 to standard TPN is expected to improve clinical outcomes and concurrently give a saving for Italian, French, German and UK hospitals.

#### PIH21

##### HEALTH ECONOMIC EVIDENCE IN SUPPORT OF A LOW-DOSE CONTRACEPTIVE LEVONORGESTREL INTRAUTERINE SYSTEM (LNG-IUS 12)

Trussell J<sup>1</sup>, Hassan F<sup>2</sup>, Henry N<sup>2</sup>, Law A<sup>3</sup>, Pocoski J<sup>3</sup>, Filonenko A<sup>4</sup>  
<sup>1</sup>Princeton University, Princeton, NJ, USA, <sup>2</sup>IMS Health, London, UK, <sup>3</sup>Bayer HealthCare Pharmaceuticals, Inc., Wayne, NJ, USA, <sup>4</sup>Bayer Pharma AG, Berlin, Germany

**OBJECTIVES:** LNG-IUS 12 is a novel intrauterine contraceptive system for up to 3 years use with an average in vitro release rate of 12 $\mu$ g of levonorgestrel per day. This study was conducted to estimate the relative cost-effectiveness of LNG-IUS 12 versus short-acting reversible contraception (SARC) in the United States from a third-party payer's perspective. **METHODS:** A Markov model was constructed to compare the effectiveness and costs of LNG-IUS 12 and SARC over a 3-year period in a cohort of 1000 women aged 20 to 29 years, the age group in which most unplanned pregnancies occur. SARC methods comprise contraceptives commonly used by this age cohort, including oral contraceptives, the ring, the patch and injections. Primary health states included initial/continued use of contraceptive method and method failure (unplanned pregnancies). The impact of switching methods was also incorporated into the model and tested through sensitivity analysis. Estimates for probabilities of failure and discontinuation, resource utilization and costs were derived from a comprehensive literature review, average wholesale drug prices and the 2012 Medicare Reimbursement Fee Schedule, respectively. Cost and effectiveness metrics for SARC were calculated as weighted averages using distribution of use data for SARC. One-way sensitivity analyses were performed on all key variables. **RESULTS:** LNG-IUS 12 dominated SARC in women aged 20 to 29 years, resulting in fewer unplanned pregnancies (9.86 vs. 238.75) and lower total costs (\$930,187USD vs. \$1,528,163USD, a 39% saving) over 3 years. The cost of contraception and number of unplanned pregnancies associated with SARC were key model drivers. Results were insensitive to variation in key input values during one-way sensitivity analyses. **CONCLUSIONS:** From a third-party payer perspective, LNG-IUS 12 is a more cost-effective contraceptive option than SARC. Additional analysis of discontinuation patterns and planned pregnancy events within future model extensions will help to further reflect real-life utilization pattern.

#### PIH22

##### CLINICAL EFFICACY AND COST-EFFECTIVENESS OF HUMAN RECOMBINANT INTERFERON- $\alpha$ 2B IN NEONATAL INFECTIONS

Soldatova I<sup>1</sup>, Pankratyeva L<sup>2</sup>  
<sup>1</sup>Research Center for Clinical and Economic Evaluation and Pharmacoeconomics, Russian National Research Medical University, Moscow, Russia, <sup>2</sup>Russian National Research Medical University, Moscow, Russia