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. CLINICAL EFFICACY AND COST-EFFECTIVENESS OF ADDITIONAL IMMUNOTHERAPY IN EARLY-ONSET NEONATAL INFECTIONS Svalastoga, D.1, Pankratyeva, L.1, Volyna, O.2

1Research Center for Clinical and Economic Evaluation and Pharmacoeconomics, Russian National Research Medical University, Moscow, Russia; 2Russian National Research Medical University, Moscow, Russia.

Immunotherapies 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) at serum concentrations of 500 mg/kg intravenously, with histocompatibility antigens identical to neonate's. RESULTS: Administration of NHI resulted in reduced NICU length of stay and mortality rates from severe infection (p = 0.02), reduced NICU length of stay and mortality rates from sepsis (p = 0.04), and reduced NICU length of stay and mortality rates from neonatal sepsis (p = 0.007). CONCLUSIONS: Additional immunotherapy in early-onset neonatal infections is a cost-effective intervention that allows to reduce mortality rates and save money.

COST EFFECTIVENESS OF SUPPLEMENTAL N-3 IN TOTAL PARENTERAL FERTILIZATION (IVF) IN GREECE: AN ANALYSIS BASED ON A LIFETIME MODEL Fragoulakis V, Maniadakis N

OBJECTIVES: To examine 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 was run over three life periods: 1) birth to 18 years, 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 expects additional resources on Social Security and old-age programs. RESULTS: In all the three life periods, 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 Statistics and Total General Population (TGP), as well as the third-party payer’s perspective. CONCLUSIONS: Additional immunotherapy in neonates with severe infections in neonatal intensive care unit (NICU) length of stay and mortality level in cases of septic shock - 7.1% [0.2%; 34%] vs 3.6% [0.1%; 11%].

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 L1,2, Enidi M3, Povero M2, Mayer K2, Keller AR, Muscaritoli M1

1Adresa PBL&OR, Turin, Italy; 2University of Torino, Torino, Italy; 3Justus-Liebig University Giessen, Giessen, Germany; 4Universitätsklinikum Carl Gustav Carus at the Technical University Dresden, Dresden, Germany; 5Università La Sapienza, Roma, Italy.

OBJECTIVES: A very recent Meta-Analysis shows that the addition of Omega-3 fatty acids to standard Total Parenteral Nutrition (TPN) is associated with reduced infection rate, ICU, and overall lengths of stay (LOS) 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 participants). Results: Clinical outcomes included in the model are death rates, nosocomial infection rates, and ICU/hospital LOS. Costs are referred to Italian, French and German health care systems. Sensitivity and comparative effectiveness analyses are undertaken to test results’ reliability. RESULTS: Compared to 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 LOS yield a lower total cost per patient. Treatment costs are completely offset by the reduction in hospital 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 and German hospitals.

HEALTH ECONOMIC EVIDENCE IN SUPPORT OF A LOW-DOSE CONTRACEPTIVE LEVONORGESTREL INTRAUTERINE SYSTEM (LNG-IUS 12) IN THE UNITED STATES FROM THE THIRD-PARTY PAYER’S PERSPECTIVE: A PROBABILISTIC Cost-effectiveness Analysis for 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 5-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 and method failure (unplanned pregnancies). The impact of switching in/continuation 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. 23.75), lower total costs ($930,187USD vs. $1,528,163USD, a 39% saving) over 3 years. The cost of continuation and effectiveness metrics for SARC were calculated as weighted averages using distribution of use data for SARC. 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.