

extracted. Only incident adult patients were analyzed (not hospitalized with PAH in 2011–2012). A medically pre-defined selection algorithm was completed with the input of medical experts in order to exclude any patient identified as presenting with another pulmonary hypertension group. Patients were followed for a year following their index stay. A separate algorithm and a medical review excluded hospitalizations not related to PAH, and classified selected admissions as inclusion (diagnosis, treatment initiation), monitoring and worsening, based on the delay of admission occurrence, length of stay, reason for hospitalization, presence of certain comorbidities and death. Hospital costs associated with PAH management were estimated using published official tariffs in France for 2013 and 2014 expressed in 2015 Euro. **RESULTS:** A cohort of 384 patients newly diagnosed with PAH was identified. Mean age of patients was 59.6 years old ( $\pm 16.7$ ), 63% were female. The 1,271 hospital stays were classified as: 415 inclusion stays (32.7%), 604 PAH monitoring stays (47.5%) and 252 PAH worsening stays (19.8%). The annual economic burden of hospitalizations for PAH was estimated to €3.6 million with inclusion stays accounting for 28%; monitoring stays for 21%; worsening stays for 51%. The median cost per stay was estimated to be €1,535 [336–108,668], varying from €1,269 [362–6,825] for monitoring stays to €4,121 [518–108,668] for worsening stays. Four patients (1%) had a lung transplantation, which accounted for 10% of total costs (€357,277). **CONCLUSIONS:** PAH worsening is a major driver of hospital-related costs supporting the relevance of clinically validated therapeutic strategies preventing disease progression.

#### PCV54

##### THE IMPACT OF AGEING ON THE FUTURE COSTS AND BURDEN OF HEART FAILURE IN PORTUGAL

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**OBJECTIVES:** To estimate, the impact of population ageing on the costs and burden of Heart Failure (HF) in Portugal over a twenty-year horizon, between 2014 and 2034. **METHODS:** HF costs were estimated using a prevalence-based approach. Costs and disability were assumed zero for patients in class I of the New York Heart Association (NYHA) Functional Classification. The prevalence rate was estimated using microdata from a previous epidemiological survey. Average direct costs per patient were estimated using: 1) a primary care national database with records of 25,337 patients registered with HF; 2) National DRG microdata; 3) expert panel; 4) national literature, reports and legislation. Indirect costs associated to patients' absenteeism and early exit from the labour force were considered. The burden was measured in Disability Adjusted Life Years (DALY) resulting from the sum of Years Lost due to Disability (YLD) and Years of Life Lost (YLL) due to premature death. For YLL, mortality rates reported in the European Detailed Mortality Database were considered. For YLD, disease duration and the overall incidence were estimated using the software DisMod II. Disability weights were retrieved from published literature. Population ageing was carried out by a shift-share analysis using the official demographic projections. **RESULTS:** Considering only population ageing on a 20-year horizon, HF prevalence (class II–IV) is expected to increase by 25%, reaching over 312,000 patients in 2034. Total costs in 2014 and 2034 are estimated, respectively, at €289M and €364M (at today's prices), with an increase in the costs per inhabitant of 34%. In 2034, total DALY are expected to be 25% higher than in 2014, from 21,162 to 26,521. The contribution of YLL will increase from 54% to 61%. **CONCLUSIONS:** Population ageing will substantially increase the burden of HF in Portugal. Health policy makers should consider new strategies to deal with this problem.

#### PCV55

##### CHRONIC HEART FAILURE (CHF) IN THE CZECH REPUBLIC: COST-OF-ILLNESS ANALYSIS & DISEASE BURDEN BASED ON AHEAD REGISTRY DATA MINING

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**OBJECTIVES:** In the absence of local real life mortality & morbidity and costs data associated with CHF in the Czech Republic, we aimed to describe CHF socio-economic disease burden (DB) from health care system perspective. This is necessary to be clarified in order to better understand added value of novel therapies. **METHODS:** We mined data from existing Acute Heart Failure Database (AHEAD). Subgroup of 1274 patients hospitalized in 2 centers in Moravia for acute heart failure (AHF) and afterwards developing CHF that are included in the AHEAD (local registry including patients after AHF hospitalization = index hospitalization), were followed up for 2 years and frequency of hospitalization and their mortality rate were assessed. Six endpoints were determined – AHF re-hospitalization, acute coronary syndrome hospitalization, cardiovascular (CV) hospitalization, non-CV hospitalization, hospitalization for any cause and overall mortality. Patients were classified into 4 groups based on outcome they reached – no death and no hospitalization; death without hospitalization; hospitalization but no death; hospitalization and death. Each hospitalization event was assigned with particular costs based on DRG tariff, just in-patient costs were described. **RESULTS:** Czech patients were generally older than patients in RCTs (median age 75.9 years). After 24 months of follow-up, 36 % of patients died and 68.2 % of patients had at least one hospitalization/ died. Average number of hospitalizations was 1.2 (SD 1.6). The average annual CHF in-patient costs are 2.8k USD (77% of costs attributed to CV hospitalization). Based on 1.6% CHF prevalence, there is 5.3% of all direct health care spending in the Czech represented by hospitalization of CHF patients. **CONCLUSIONS:** Patients in real life are in significantly higher risk of hospitalization and all-cause mortality (by approx. 80 %), compared to RCT population. Overall HF DB in the Czech is notable and compared to published evidence it is greatly underestimated.

#### PCV56

##### BURDEN OF CARDIOVASCULAR DISEASE (CVD) FOR PATIENTS WITH FAMILIAL HYPERCHOLESTEROLEMIA (FH) OR ATHEROSCLEROTIC CVD (ASCVD) AND THE IMPACT OF LOW DENSITY LIPOPROTEIN-CHOLESTEROL (LDL-C) LOWERING IN TWO MIDDLE EAST COUNTRIES

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**OBJECTIVES:** To estimate the burden of CVD and the impact of LDL-C lowering in patients with FH or ASCVD with uncontrolled LDL-C levels in Saudi Arabia (SA) and United Arab Emirates (UAE). **METHODS:** The number of statin-treated national patients with FH or ASCVD with uncontrolled LDL-C  $\geq 100\text{mg/dL}$  ( $\geq 2.6\text{ mmol/L}$ ) in SA and UAE was estimated based on country population and disease prevalence. The clinical benefits of evolocumab as an add-on therapy to statins were derived from a long-term cardiovascular outcomes study (FOURIER) and the Cholesterol Treatment Trialists' Collaboration, a large meta-analysis of statin outcomes trials, modeled over a lifetime to determine the impact on CV events, hospitalization costs, and quality adjusted life years (QALY). **RESULTS:** The number of statin-treated national patients with FH or ASCVD with uncontrolled LDL-C was estimated at 28,692 FH and 293,697 ASCVD in SA; 2,419 FH and 27,606 ASCVD in UAE. Over the lifetime of an individual with FH, the additional LDL-C lowering with evolocumab is projected to result in a 0.52 (28%) CVD event reduction, a decrease in hospitalization costs of \$5,225 USD in SA and \$5,008 USD in UAE, and an average increase of 3.26 QALY. Similarly, over the lifetime of an individual with ASCVD, the additional LDL-C lowering with evolocumab was projected to result in a 0.44 (23%) CVD event reduction, a decrease in hospitalization costs of \$4,403 USD in SA and \$4,219 USD in UAE, and an average increase of 1.84 QALY. **CONCLUSIONS:** CVD burden is significant in SA and UAE for FH and ASCVD patients. There is a great potential for clinical and economic benefits with further LDL-C reduction using evolocumab on top of statin therapy.

#### PCV57

##### THE COST OF ILLNESS OF HEART FAILURE IN PORTUGAL

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**OBJECTIVES:** To estimate direct and indirect costs associated to adult Portuguese patients with heart failure (HF) in 2014. **METHODS:** A prevalence-based approach was adopted to estimate costs associated to HF. Prevalence in 2014 by the New York Heart Association (NYHA) Functional Classification was estimated using microdata from a previously conducted national community-based epidemiological survey. Only patients at NYHA classes II–IV were considered to have costs and it was conservatively assumed that patients were either followed in hospital ambulatory care or in primary care. Primary care costs were estimated using a database covering a large population, with records of medications, medical visits and medical tests or diagnostic procedures for 25,337 patients with a HF diagnosis in 2014. Hospital resource consumption was estimated using national DRG microdata. Resource utilization in hospital ambulatory care and in emergency department (ED) episodes was estimated according to experts' opinion and the national literature, respectively. Unit costs were based on the official NHS tariffs. The indirect costs associated to patients' absenteeism and early exit from the labour force were based on national sources and conservative assumptions. **RESULTS:** The class II–IV prevalence rate in the population aged 25+ was estimated at 3.4%, corresponding to 249,592 patients in 2014. HF patients have about 1.1 million medical visits, over 36,000 hospitalizations and approximately 53,000 ED episodes. In 2014, the overall direct and indirect costs were estimated at €289.4M with an average annual cost per patient of €1,159. Medication, medical visits, exams/diagnostic procedures, hospitalization and ED episodes accounted for 29%, 20%, 21%, 26% and 2% of the €244.9M direct costs, respectively. The indirect costs associated to absenteeism and premature exit from the labour market were estimated at €16.4M and €28.1M, respectively. **CONCLUSIONS:** Heart failure is a costly condition and should receive adequate attention from the Portuguese health policy makers.

#### PCV58

##### ECONOMIC BURDEN OF HEART FAILURE IN ASIAN COUNTRIES

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**OBJECTIVES:** We conducted this study to estimate economic burden and find unmet needs in 4 Asian countries including Korea (KR), Taiwan (TW), Thailand (TH), and Malaysia (MY). **METHODS:** It was a retrospective, cohort, medical chart review, and non-interventional study in 4 countries of 6 tertiary hospitals. With different Gross Domestic Product (GDP) per capita (KR \$27,811, TW \$22,639, TH \$5,921, MY \$11,009), it aimed not to compare the results among countries, but to estimate and describe it respectively. Patients who met those criteria were included; 1) over 19 years old, 2) diagnosed with HF (ICD 9 or 10 codes and 3)  $\geq 1$  hospitalization or  $\geq 2$  outpatient visit. Index period was one year (Jan. 1 to Dec. 31 in 2014). We collected variables including demographics, healthcare cost and resumption including drugs. **RESULTS:** A total of 568 patients were included (KR 200, TW 200, TH 100, MY 68). We particularly focused on patients with hospitalization experience and there were KR 40, TW 187, TH 49, and MY 48 patients, respectively. In Korea, hospitalization cost per event was \$7,419 and \$10,714 in annual cost per patient. In