costs and age adjusted mortality in Spain in 2009-2013. **METHODS:** Statistical mining of data stemming from the Spanish Ministry of Health´s heart failure related hospital admissions and mortality databases, which are classified by International Classification of Disease (ICD) or Diagnosis Related Group (DRG) codes: ICD9: 428 (Heart Failure), ICD10: 0907 (Heart failure), DRG: 127 (Heart failure and Shock) and DRG: 544 (Congestive heart failure and cardiac arrhythmia) for the period 2009 to 2013. **RESULTS:** Hospital admissions due to HF increased 14.39% from 2009 (89,126) to 2013 (101,953). Yet, the average length of stay in a hospital decreased by 7.84% (9.17 vs. 8.45 days). The average cost per admission decreased by 9.74%, from €4,434.50 in 2009 to €4,002.44 in 2013. The total cost increased from €395 MM to €408 MM. In regards to age, in 2009, the total cost for those under 40 years amounted to €3.5 MM, €42 MM for people aged 40-64, €72 MM for those aged 65-74, €165 MM for 75 years to 84 and €113 MM for 85 years or older. A positive trend was observed in the total cost of the eldest patients, reaching €131 MM in 2013. Age-adjusted mortality rate decreased from 19.21 to 15.90 per 100,000 inhabitants. Total number of deaths also decreased from 17,592 in 2009 to 16,888 in 2013. **CONCLUSIONS:** The total cost of hospital admissions for HF increased in 2013 compared to 2009, while mortality experienced a slight decrease.

## PCV148
### ANALYSIS OF PRIMARY AND SECONDARY APR-DRG CODES OF AN ISCHEMIC STROKE ADMISSION

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**OBJECTIVES:** To investigate the factors influencing the Severity of illness index of the All Patient Refined DRGs (APR-DRG) classification of patients experiencing an ischemic stroke. **METHODS:** We conducted a retrospective analysis of ischemic stroke patients classified as "APR-DRG 045: CVA & Precerebral Occlusion with Infarct" between 2005-2007 admitted to the leading teaching hospital in Belgium. Each admission was assigned a primary diagnosis, followed by one or more secondary diagnoses. Based on an algorithm combining these diagnoses a SOI level was assigned to each hospitalization, informing the payment/reimbursement for each admission. This classification allows for the relative comparison of patient subgroups within each APR-DRG and severity subclass, and was designed to reflect the relative resources required for treatment, enabling for the casemix adjustment of the payment/reimbursement system. **RESULTS:** 1,107 stroke admissions were recorded during the study period, distributed across four SOI categories: 2% minor, 44% moderate, 36% major, 18% severe. No relationship was found between the type of primary diagnosis and the SOI level. Of the 1,407 secondary diagnoses assigned in the dataset, only half (783) were specific to one single SOI category; all others were found in 2, 3 or even 4 SOI levels. However a significantly positive relationship was found between the average number of secondary diagnoses assigned per patient and the SOI: on average 5.9, 11.3, 19.4 and 25.6 secondary diagnoses were allocated for increasing levels of SOI. Secondary diagnoses such as MI, diabetes, atrial fibrillation, hypertension, hypercholesterolemia, smoking, atherosclerosis were individually not linked to more severe levels of SOI, however the combination of these factors did affect a patient's SOI. **CONCLUSIONS:** Payment/ reimbursement decisions for patients experiencing an ischemic stroke will be based on the resources necessary to manage a case mix of secondary diagnoses rather than be informed by the severity of the stroke.

## PCV149
### SIMULATING THE IMPACT OF A CARDIOVASCULAR PREVENTION PROGRAM

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**OBJECTIVES:** MGEN, a health insurance covering mainly teachers in France, is looking to set up a coronary heart diseases (CHD) prevention program in order to reduce CHD mortality, morbidity, and associated costs. However, due to the particular demographics of the covered population, the expected benefits of the program, given the programs parameters, is difficult to foresee. Yet, an estimation of the program effectiveness could help promote the programs importance to decision makers, motivate individuals responsible for the program implementation and encourage patient enrolment. Thus, the objective of this study was to construct a tool that could simulate the effectiveness of CHD prevention based on the demographical characteristics of the target population. **METHODS:** We constructed a micro-simulation model that simulated a cohort of individuals participating in a CHD prevention program. Individuals' baseline characteristics were based on age and sex distribution. CHD risk factors including systolic arterial pressure, body mass index, total cholesterol, smocking, diabetes, stroke and CHD prevalences were fitted by age and sex for the French population. Effectiveness values for CHD prevention programs were based on the COCHRANE review. One-year and ten year CHD mortality were estimated from SCORE and 10 years CHD events from FRAMINGHAM. **RESULTS:** Implementing a prevention program in a population of a 100 000 representative of the insurance population with a 27% participation rate reduced CHD mortality by 9 after 1 year. The number needed to treat (NNT) was 2988. Excluding individuals with no CHD risk factors reduced NNT to 1571 with a similar mortality reduction. Further excluding participants of 44 years or less reduced NNT to 947 and double the mortality reduction. **CONCLUSIONS:** The effectiveness and efficiency of a CHD prevention program is sensitive to the target population. Simulation tools are useful to decision makers to better specify the target population in order to optimize the program's efficiency.

## PCV150
### A TRIPLE AIM FRAMEWORK FOR THE PERFORMANCE ASSESSMENT OF DISEASE MANAGEMENT PROGRAMS

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**OBJECTIVES:** A structured and comprehensive assessment of disease management implementations is not straightforward due to the broadness of the interventions and the various evaluation possibilities. The aim of this study was to develop a comprehensive framework for outcome measurement of disease management programs based on the triple aim framework of the Institute for Healthcare Improvement to facilitate future performance assessment using multi-criteria decision analysis (MCDA). **METHODS:** Based on literature review and our expertise in performing economic evaluations in disease management we identified domains of outcomes for each aim of the triple aim framework. For each domain we identified indicators to assess the performance of disease management programs. **RESULTS:** The first aim of the framework, population health improvement, was subdivided into the domains health-adjusted life years, mortality, wellbeing, health-related quality of life (HrQol), complications, symptoms, clinical outcomes, healthy behaviour, knowledge, and self-management skills. The second aim, improvement of patient experience, was subdivided into patient involvement, patient centeredness, continuity of care, coordination, communication, information systems, safety and access. The third aim of cost reductions distinguished program, medical and non-medical costs. Potential Indicators of the identified sub-criteria include the ASCOT (Adult Social Care Outcomes Toolkit) for measuring wellbeing, smoking rates and BMI (Body Mass Index) to measure healthy behaviour, the EuroQol-5D and Short Form-36 for measuring physical, mental and social HrQol, different dimensions of the PACIC (Patient Assessment of Chronic Illness Care) and CAHPS (Consumer Assessment of Healthcare Providers and Systems) for measuring patient experience and several measurement tools for measuring friction costs and costs of informal care. **CONCLUSIONS:** In designing a structured outcome-based framework for the performance evaluation of disease management programs we paved the way for future work including a comprehensive evaluation of disease management using MCDA. MCDA not only requires measurement of indicators but also weighting of their relative importance.

## PCV151
### ATRIAL FIBRILLATION AND ANTI-COAGULATION SERVICE RUN BY A CLINICAL NURSE SPECIALIST

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**BACKGROUND:** Annually in England there are 89,000 strokes. 18% of patients presenting with stroke are in AF at presentation, equating to some 16,000 strokes, of which 12,500 are thought to be directly attributable to AF. **OBJECTIVES:** Reduce the number of AF related strokes by optimal anticoagulation according to NICE CG 180. Provide education and support to GP practices around identification of patients with AF as well as appropriate anticoagulation. **METHODS:** In this analysis, a total of 5 GP practices ran the Guidance on Risk Assessment and Stroke Prevention for Atrial Fibrillation (GRASP-AF) audit tool to identify patients diagnosed with AF. An AF nurse specialist reviewed each patient to ensure that they are on optimal anticoagulation based on clinical characteristics and NICE CG 180. **RESULTS:** A total of 374 patients have been reviewed with an average age of 77 and an equal proportion of males. The majority of patients are diagnosed with permanent AF (54%); have a CHA2DS2-VASc score between 3 and 5 (3: 18%, 4: 20%, and 5: 22%) and a HAS-BLED score of 2 (48%). The number of patients prescribed aspirin and clopidogrel has been reduced from 26% and 6%, to 8% and 3%, respectively. In addition, the number of patients treated with non-vitamin K antagonist oral anticoagulants (NOACs increased from 2% to 19% after treatment review. Patient satisfaction survey results revealed that patients are happy with the service and felt at ease discussing treatment options. **CONCLUSIONS:** Overall, 34% of patients received a revised treatment regimen based on NICE CG 180. The results indicate that despite not being recommended in NICE CG 180, a high proportion of AF patients are currently managed with antiplatelet instead of anticoagulation. In addition, a nurse specialist service redesign has the potential to optimise AF anticoagulation services, providing long-term reductions of AF-related strokes.

## PCV152
### NOVEL ORAL ANTICOAGULANT USE IN THE EU5: HOW ARE PAYER POLICIES AND PHYSICIAN PREFERENCES SHAPING THE PRESCRIBING LANDSCAPE?

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**OBJECTIVES:** EU5 reimbursement authorities are promoting cost-effective treatment practices against a backdrop of tightening healthcare budgets. However, label expansions for novel oral anticoagulants (NOACs) threaten to dramatically increase expenditure for the treatment of atrial fibrillation (AF), venous thromboembolism (VTE), and acute coronary syndrome (ACS). This study explores the impact of payer policies and physician preferences on prescribing for these indications. **METHODS:** In December 2014/January 2015, 252 cardiologists across the EU5 were surveyed regarding their current and expected prescribing of the NOACs for AF, VTE, and ACS. In addition, 15 payers who influence reimbursement at national/regional level were interviewed. **RESULTS:** The impact of cost-containment strategies on NOACs uptake varies across the EU5, but is most notable in Spain, where over one-third of physicians report that NOACs prescribing is severely restricted by the inspection visa system. In all countries studied, cost-containment strategies least impact AF prescribing, while the greatest impact is on prescribing of rivaroxaban in ACS. Overall, surveyed physicians report that, on average, 32-60% of their VTE patients, and 48-71% of their AF patients currently receive a NOAC. Uptake is highest in France (VTE) and Italy (AF), and lowest in the UK. By 2018, over 60% of physicians in each EU5 country anticipate increased use of rivaroxaban and apixaban for both AF and VTE. However, expected prescribing of dabigatran etexilate is more varied, and is least likely for VTE. Interviewed payers caution that pressure on physicians to prescribe cheaper vitamin K antagonists (VKAs) will likely increase, as will negotiations with manufacturers to secure lower NOAC prices are essential. **CONCLUSIONS:** Surveyed EU5 cardiologists expect to increase their use of NOACs by 2018. However,