and the decrease in AF-QoL score, particularly in paroxysmal and persistent AF patients. **CONCLUSIONS: The main impact on HRQoL in AF patients was not** conditioned by the type of AF, but the clinical presentation, especially number and frequency of symptoms.

PCV147

EXPERIENCE WITH UPPER GASTROINTESTINAL SYMPTOMS IN PATIENTS WITH CARDIOVASCULAR RISK TREATED WITH LOW-DOSE ACETYLSALICYLIC ACID

Sörstadius E[1], Thompson VJ[2], Pratt SE[3], Delgado JP[4], Nauclér E[1], Næsdal J[1], Junghard O[5]
[1]AstraZeneca R&D, Mölndal, Sweden, [2]Libra Clinical Research Associates LLC, Brick, NJ, USA, [3]Harmony Clinical Research, San Ramon, CA, USA, [4]Integrated Medical Research, Ashland, OR, USA, [5]AstraZeneca R&D, Mölndal, Göteberg, Sweden

OBJECTIVES: To describe the experience with upper gastrointestinal (GI) symptoms, the impact of symptoms on daily life, and nonadherence and discontinuation of low-dose acetylsalicylic acid (ASA) treatment in patients with cardiovascular (CV) risk. **METHODS:** Twenty-two patients from the US were selected to undergo face-to-face, 1-hour qualitative interviews following a multicentre 3-month observational study of patients ≥18 years at risk of or with CV disease, about to begin or previously prescribed daily low-dose ASA (75–325 mg) within 5 years (ClinicalTrials.gov identifier: NCT00681759; AstraZeneca study code: D961FC00004). Interviewee-selection was based on low-dose ASA history, CV risk, GI medication use, and the occurrence of ≥1 upper GI event during the study period. Interviews were semi-structured and were audio-recorded and transcribed for analysis. **RESULTS:** 16 interviews were evaluable (mean age 44.7 years; 68.8% women); 6 patients were excluded following technical failure or violation of inclusion/exclusion criteria. Commonly reported upper GI symptoms were: burning feeling behind the breastbone (n = 9); burning feeling in the upper stomach (n = 4); acid taste in the mouth (n = 4); regurgitation (n = 4). Upper GI symptoms negatively impacted aspects of patients' lives, including: food intake (n = 12); sleep quality (n = 6); emotions (n = 5). Most patients reported occasional over-the-counter medication use; many altered their diet to manage upper GI symptoms. Overall, five patients reported treatment nonadherence. Upper GI symptoms caused nonadherence in 3 patients; 2 missed doses when GI symptoms were severe, despite being aware of low-dose ASA benefits. Patients who understand the purpose of their low-dose ASA prescription could articulate the importance of adherence and the intention to continue therapy. **CONCLUSIONS:** Patients who understand the purpose of low-dose ASA treatment are more likely to adhere to therapy, although doses may be intentionally missed due to upper GI symptoms.

PCV148

HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH HYPERCHOLESTEROLEMIA

Müller-Nordhorn J[1], Englert H[2], Wegscheider K[3], Berger H[4], Völler H[5], Katus HA[6], Willich SN[1]
[1]Charité University Medical Center, Berlin, Germany, [2]University of Applied Sciences, Münster, Germany, [3]Department of Medical Biometry and Epidemiology, Hamburg, Germany, [4]University of Applied Sciences, Osnabrück, Germany, [5]Klinik am See, Rüdersdorf, Germany, [6]Department of Cardiology, Heidelberg, Germany

OBJECTIVES: In patients with chronic diseases such as hypercholesterolemia, health-related quality of life (HRQoL) is an important outcome. The objective of the present study was to determine factors associated with an impaired HRQoL after 12 months. **METHODS:** Patients with hypercholesterolemia were prospectively included in the ORBITAL (Open-label primary care study: Rosuvastatin-Based compliance Initiatives linked To Achievement of LDL goals) Study. Inclusion criteria were hypercholesterolemia with an indication for statin therapy according to the European Guidelines. Follow-up was 12 months. A total of 1961 primary care practices in Germany participated. HRQoL was assessed with the Short Form (SF)-12 health status instrument. **RESULTS:** Of the 7640 patients included, 47% were high-risk patients in the primary prevention of coronary heart disease, 42% were patients with coronary heart disease, and 11% did not have a priori risk stratification. Physical SF-12 summary scores were inversely associated with risk stratum, however, there was no such association between mental SF-12 summary scores and risk stratum. An impaired physical SF-12 score was associated with increased age, lower educational level, higher body mass index, smoking, existing coronary heart disease, a history of stroke, or a clinical event during follow-up. An impaired mental SF-12 score was associated with younger age, hypertension, or a clinical event during follow-up. **CONCLUSIONS:** HRQoL in patients with hypercholesterolemia is associated with socioeconomic factors, lifestyle, and clinical events. Effective prevention is thus not only essential for clinical outcome but also for the maintenance of HRQoL in patients with hypercholesterolemia. ClinicalTrials.gov Identifier: NCT00379249.

PCV149

ASSESSMENT OF QUALITY OF LIFE AMONG PATIENTS WITH HYPERTENSION AND DIABETES TYPE 2

Turska W, Skowron A
Jagiellonian University Collegium Medicum, Cracow, Poland

OBJECTIVES: The assessment of quality of life among ambulatory patients with hypertension (HTN), diabetes type 2 (DM2) or coexisting HTN and DM2 (HTN+DM2). **METHODS:** Patients of 4 ambulatory care setting in Cracow (Poland) with HTN, DM2 or HTN+DM2 were included. Polish versions of SF-36v.2 and EQ-5D were used with the supplementary questions about age, gender, education, body mass, place of residence. Student's t-test was used to compare the differences between paired groups. **RESULTS:** A total of 135 patients were included (68 with HTN, 22 with DM2, 45 with HTN+DM2); 57,8% of patients were women. 31,11% of patients with HTN+DM2, 36,77% of patients with HTN and 72,73% of patients with DM2 assessed their health status as well, none indicated the answer excellent or very good. Usually women indicated their QOL lower than men (HTN: PF, RP, PCS $p < 0,05$; HTN+DM2: PF, PB $p < 0,05$). PCS was rated lower or similar to MCS; HTN: PCS 39,30 ± 7,88, MCS 40,45 ± 10,96, DM2: PCS 42,77 ± 8,22, MCS 42,23 ± 9,86; HTN+DM2: PCS 38,89 ± 9,05, MCS 42,66 ± 10,66. Due to EQ-5D 80% of patients had no problems with self care and 60% – with usual activities. Over 85% of patients had moderate or extreme pain or discomfort, more than 70% of patients felt moderately or extremely anxious or depressed. About 75% of patients with HTN and HTN+DM2 confirmed problems with walking around. On VAS scale, patients with HTN, DM2 and HTN+DM2 assessed their health state accordingly: 54,87 ± 15,70, 59,14 ± 21,06, 55,56 ± 14,50, with no statistically significant differences between diseases and sexes. **CONCLUSIONS:** Patients with HTN and HTN+DM2 estimated their quality of life lower than patients with DM2.

PCV150

WORK PRODUCTIVITY AND ACTIVITY IMPAIRMENT IN PATIENTS WITH METABOLIC SYNDROME: A COMPARISON OF THE UNITED STATES, EUROPE, AND JAPAN

Wagner S[1], Fukuda T[2], Nagae T[3], Gupta S[1], DiBonaventura M[1], Stankus AP[1]
[1]Consumer Health Sciences International, Princeton, NJ, USA, [2]University of Tokyo, Bunkyo, Tokyo, Japan, [3]York Pharma KK, Tokyo, Japan

OBJECTIVES: To investigate the differences in work productivity in patients with metabolic syndrome across three geographies. **METHODS:** Data from the 2008 National Health and Wellness Survey (NHWS), an annual internet survey of attitudes, behaviors, health status, and outcomes of adults in the US, EU (Germany, Spain, Italy, UK, and France), and Japan (JPN) were used for the analysis. Metabolic syndrome was defined as having at least three of the following: diabetes, BMI >= 30, high cholesterol, or hypertension. Multiple regressions were used to determine the effect of geography on work productivity using the validated Work Productivity and Activity Impairment Questionnaire (WPAI) controlling for age, gender and total number of comorbidities. **RESULTS:** Of the 3,995 employed patients with metabolic syndrome in the analysis 881 (22.1%) were from Europe, 89 (2.2%) from JPN, and 3,025 (75.7%) from the US. EU patients (10.9%) had significantly higher levels of percent work missed in the past week due to health (absenteeism) than US (6.2%) and JPN (5.3%) patients. No significant differences amongst geographies were seen for percent impairment at work (presenteeism), however, EU patients had higher levels of percent overall work impairment compared to US patients ($p < 0.05$). For all metabolic patients (n = 11,131) activity impairment was significantly lower for JPN compared with US and EU ($p < 0.05$). After controlling for age, gender and number of comorbid conditions, the differences remained significant, with EU having higher absenteeism, overall work impairment, and activity impairment than the US, and JPN reporting less activity impairment than the US ($p < 0.05$). **CONCLUSIONS:** The effect of metabolic syndrome on work productivity differed significantly across the three geographies. Any combination of factors may explain these differences: awareness of the condition, treatment differences, cultural issues, and health systems, amongst other. Further research is needed to describe the impact metabolic syndrome may have globally.

CARDIOVASCULAR DISORDERS – Health Care Use & Policy Studies

PCV151

REVIEW OF STUDIES EVALUATING THE IMPACT OF POLICY-DRIVEN STATIN SWITCH PROGRAMS ON PATIENTS

Folia C[1], Liovas A[2]
[1]Agro Health Associates Inc., Burlington, ON, Canada, [2]AstraZeneca Canada Inc, Mississauga, ON, Canada

OBJECTIVES: Although cardiovascular disease remains a major cause of death and morbidity in western countries, statins are well recognized for their role in prevention. The on-going need to maintain cost-effective health care has led to greater use of policy-driven therapeutic substitution programs for statins; however the impact of these policies on patients is often under-reported. **METHODS:** A review of published literature describing the impact of policy-driven statin switch programs was conducted based on a MEDLINE search [using the following terms: Hydroxymethylglutaryl-CoA Reductase Inhibitors (MeSH), and statin, switch, interchange, substitute, substitution (all fields); limited to English language and 1989–2009] and a review of reference lists from selected papers. **RESULTS:** Twenty-three studies were identified. Seventeen studies evaluated the impact of a "switch down" to equal or less potent statins. 6 studies evaluated the impact of a "switch up" to more potent statins. Following introduction of "switch down" programs, 23–47% of patients were not eligible or willing to switch (7 studies), 17–38% of patients were switched to a non-equivalent (lower) dose of the new statin (3 studies), 4–11% of patients switched back to their original statin (5 studies), and switched patients were 19–33% less likely to be adherent to therapy compared to those with no switch. Persistence was significantly reduced among switch patients (2 studies). No significant trend in lipid levels was noted (12 studies) but loss of target levels was reported in 7–20% of patients (2 studies) and 3 studies reported an increase in vascular events or death after switching. Studies evaluating "switch up" programs consistently demonstrated improved reductions in lipid

levels (6 studies) and greater proportions of patients achieving LDL goals (5 studies). **CONCLUSIONS:** Policy-driven programs that encourage wide-spread switching of statins without consideration of patient-specific circumstances may impact the delivery of patient care and treatment outcomes.

PCV152

ASSESSING THE IMPACT OF A COMMUNITY PHARMACY BASED MTM PROGRAM ON OUTCOMES FOR EMPLOYEES WITH HYPERTENSION

Pinto SL, Bechtol R, Partha G
The University of Toledo, Toledo, OH, USA

OBJECTIVES: To determine the effect of an employer-sponsored pharmacist-provided medication therapy management program (MTMP) on clinical outcomes and social measures in patients with hypertension. **METHODS:** A prospective, intent-to-treat, pre-post longitudinal study. Patients were Lucas County employees and/ dependents with a diagnosis for hypertension. The face-to-face MTMP was provided by pharmacists from the Toledo Area Coalition of Independent Pharmacies at seven pharmacies. JNC-VII guidelines were used to design interventions and set patient goals. Interventions were provided every six months. Information recorded included demographic information, clinical markers and social measures. Data was documented by pharmacists or pharmacy technicians using intake forms. Data was analyzed using SPSSv 16.0 for two groups i.e. hypertension only (may have other comorbid conditions excluding diabetes) and hypertensive diabetics. Wilcoxon signed-rank test was used to compare 2 time points and the Friedman test was to compare readings at baseline, six and 12 months. **RESULTS:** Two hundred and twenty eight patients have enrolled in the program. For the hypertension only group, mean systolic blood pressure (SBP) improved from 133.73 ± 17.36 to 130.86 ± 16.49 ($p = 0.112$). For uncontrolled hypertensive patients in this group, mean SBP improved from 152.54 ± 11.80 to 139.77 ± 18.22 ($p = 0.000$). Diastolic blood pressure improved from 99.330 to 91.50 ($p = 0.049$). For hypertensive diabetic patients mean SBP decreased from 135.64 ± 18.21 to 127.55 ± 15.26 ($p = 0.003$). Significant decrease was also observed for hypertensive diabetic with uncontrolled blood pressure at baseline (146.26 ± 13.55 to 131.44 ± 13.66 mmHg; $p = 0.000$). Mean alcohol and caffeine consumption decreased non-significantly for patients in both groups. **CONCLUSIONS:** Pharmacists interventions assisted uncontrolled patients in reaching their goal BP reading, and for controlled patients, helped in maintaining their level of control. Periodic monitoring by a pharmacist can assist patients in reaching their targeted goal and maintaining that value so as to prevent long-term complications and costs.

PCV153

MARYLAND MEN'S CARDIOVASCULAR PROMOTION—MVP

Shaya FT[1], Ke X[1], Yan X[1], Norman N[1], Shematek J[2]
[1]University of Maryland School of Pharmacy, Baltimore, MD, USA, [2]CareFirst BlueCross BlueShield, Owings Mills, MD, USA

OBJECTIVES: African American men have lower hypertension control rates and higher cardiovascular disease mortality rates than those of Caucasian males. We examined how a peer approach to hypertension management could improve blood pressure control for participants, mostly minority males. **METHODS:** This is a longitudinal cohort study. Patients in the intervention group enrolled relatives or friends in the hypertension education program and attended as teams, the monthly education sessions. Patients in the control group followed standard of care. Blood pressure was taken by a nurse, at baseline and every 3 months, for up to 15 months. Other clinical and behavioral information was obtained from medical charts and surveys at baseline and follow-up visits. We used survival analysis to compare time to achieve the defined goal (patients without diabetes: systolic blood pressure (SBP) < 140, patients with diabetes: SBP < 130) between the two groups controlling for confounders and clusters of patients. **RESULTS:** A total of 250 subjects were included in the study; half in the intervention group. Approximately 90% of the participants were African American and 60% were males. The baseline blood pressure levels were 149/88 mmHg and 146/88 mmHg in the control and intervention group ($p > 0.25$). After controlling baseline blood pressure, gender, race, age, diabetes, smoking and patient clusters, we found that patients in the intervention group reached goal at a rate 4.97 times (95% CI: 2.02–12.25) higher than the rate in the control group. However, higher baseline SBP (HR = 0.96, 95% CI: 0.93–0.98), males (HR = 0.54, 95% CI: 0.31–0.95) and smoking (HR = 0.39, 95% CI: 0.20–0.77) were significantly associated with longer time to achieve the goal. **CONCLUSIONS:** Patients who approached hypertension management with their peers were much more likely to achieve blood pressure control in a shorter time than patients in standard of care. These findings have implications for clinical and public health interventions.

PCV154

THE INFLUENCE OF INSURANCE COMPANIES' REGULATIONS ON DRUG UTILIZATION; THE EXAMPLE OF SIMVASTATIN AND PREFERENCE POLICY

Pechlivanoglou P, Postma MJ, Wieringa J
University of Groningen, Groningen, The Netherlands

OBJECTIVES: In 2004 and 2005, Menzis, a Dutch health insurance, company stimulated physicians in prescribing cheaper versions of statins and proton pump inhibitors by offering financial incentives to physicians who could reach specific annual prescribing thresholds (preference policy). The objective of this research is to quantify the effect of the preference policy of Menzis on the utilization/demand of statins in the Northern part of The Netherlands. Furthermore, we test the hypothesis of a significant difference in the increase of simvastatin starters between Menzis and the other insurance companies potentially due to the preference policy. **METHODS:** Prescription data originating from the Northern The Netherlands on the amount of simvastatin starters and simvastatin market share were extracted from IADB.nl, an in-house prescription database of the University of Groningen. State-space analysis was used in order to estimate the effect of the preference policy. The Kalman filter was applied on an intervention state space model, followed by diagnostic tests for the independence, homoscedasticity and normality of the standardized prediction errors. **RESULTS:** A sharp increase in the level as well as in the trend of the market share of simvastatin around the last trimester of 2004 was observed, corresponding to the time point when the preference policy was initiated. A steep increase was apparent also on both the amount of Menzis clients that started use of simvastatin, as well as on the market share of simvastatin among Menzis clients. The interventions had a significant, decreasing effect on the cost of simvastatin treatment. **CONCLUSIONS:** The preference policy resulted in an increase of prescribing for simvastatin, the cheaper statin alternative, which consequently resulted in a decrease in cholesterol lowering treatment costs.

PCV155

IMPACT OF EXPANDING PHARMACY BENEFITS ON TREATMENT OF CONGESTIVE HEART FAILURE: THE CASE OF MEDICARE PART D

Donohue JM[1], Zhang Y[1], Lave J[1], Gellad WF[2], Perera S[1], Men A[1], Hanlon J[1]
[1]University of Pittsburgh, Pittsburgh, PA, USA, [2]RAND, Pittsburgh, PA, USA

OBJECTIVES: In 2006, US Medicare created a new drug benefit (Part D) for older adults. Part D cut down the number of older adults lacking drug coverage and reduced out-of-pocket costs, yet little is known about its effect on treatment of specific conditions. Given Medicare's role in financing 20% of US and 9% of global pharmaceutical expenditures it is important to evaluate its effects. We examined Part D's effect on drug utilization for congestive heart failure (CHF), a condition with substantial morbidity and mortality. **METHODS:** Quasi-experimental study using insurance claims data from 7201 older adults with CHF continuously enrolled in a Medicare plan in 2004–07. Three intervention groups with either no or limited drug coverage in 2004–05 (US$600 or US$1400 annual limits) who obtained Part D drug benefits in 2006 were compared with a group with generous pharmacy benefits throughout 2004–07. We estimated Part D's effect on CHF drug utilization and adherence, adjusting for differences in sociodemographic and health status measures. **RESULTS:** Part D was associated with a 37% (95% CI 31–43%) increase in CHF prescriptions filled by the group previously lacking coverage, and increases of 10% (95% CI 6–12) and 7% (95% CI 6–8%) in the groups with limited prior coverage, relative to comparison group. The group previously lacking coverage was more likely to be adherent to angiotensin-converting enzyme inhibitors (ratio of odds ratios 2.20, 95% CI 1.65–2.88) and beta blockers (ratio of odds ratios 2.56, 95% CI 1.95–3.35) after Part D relative to comparison group. Groups with limited prior drug coverage experienced statistically significant, if smaller, improvements in adherence. **CONCLUSIONS:** Medicare Part D was associated with significant improvements in adherence to pharmacotherapy for CHF, the magnitude of which varied with the level of prior drug coverage. These findings have implications for health systems contemplating drug coverage expansions.

DE1

MARKET CONCENTRATION AND ITS CROSS-LINKAGE WITH THE CONSUMPTION OF ACE INHIBITORS AND ARBS

Zhang JX[1], Tao J[2]
[1]Virginia Commonwealth University, Richmond, VA, USA, [2]Virginia Commonwealth University, Richmond , VA, USA

OBJECTIVES: Market concentration of products affects competition, and thus is a key concern of marketing firms, policy makers, and regulators. Angiotensin converting enzyme inhibitors (ACE inhibitors) and angiotensin receptor blockers(ARBs) are two classes of hypertensive drugs, competing for one of the largest and most profitable pharmaceutical market in the US. However, little is known about how market concentration affects the consumption of these drugs. We sought to measure the concentration of drugs in ACE inhibitors and ARBs and its association with their relative market share. **METHODS:** We used the State Drug Use Data from the Medicaid Drug Rebate Program that provides prescription drugs to 46 million low-income Americans. We linked the data with the WHO Collaborating Centre for Drug Statistics Methodology to obtain Defined Daily Dose (DDD) measurements for drug consumption for four large states, for a total of 16 quarters of continuous measurements between 2005 and 2008. We used a Herfindahl-Hirschman Index (HHI) to measure the concentration in ACE inhibitors and ARBs, by DDD and reimbursements. We conducted multivariate GLS regression analysis by regressing the HHI on the relative market share of ACE inhibitors, adjusted for time trend, the interaction between the HHI and time trend, and random effects of states. **RESULTS:** During the 16 quarters between 2005 and 2008, the mean concentration index for ACE Inhibitors was 339 (s.d. 71) by DDD, 442 (s.d. 148) by reimbursements, and for ARBs 887 (s.d. 277), 693 (s.d. 227) by DDD and reimbursements, respectively. The market share of ACE inhibitors was negatively associated with the concentration in ARBs ($p < 0.001$, $p < 0.001$), and marginally positively associated with the concentration in ACE inhibitors ($p = 0.05$, $p = 0.09$), by DDD and reimbursements, respectively. **CONCLUSIONS:** The relative market share of ACE inhibitors and ARBs is cross-linked with concentration of drugs within each of these two classes.