Results: The impact of strictly switching all proton pump inhibitors to esomeprazole at admission resulted in a spillover "extra-cost" of €330.3 (95% CI, 276.1 to 383.8) thousand, whereas strictly switching to generic cetirizine resulted in savings of €7.7 (95% CI, –11.1; –4.1) thousand. Over the entire study period, we estimated that the RDF resulted in "extra-costs" of €503.6 (95% CI, 444.5 to 563.1) thousand.
Conclusion: Hospitals may contribute to increased overall health care costs if follow-on drugs are listed in the RDF. Therefore, health care providers and policy makers should be aware of the impact of evergreening strategies.
Disclosure of Interest: N. Vernaz: No conflict to declare. G. Haller: No conflict to declare. F. Girardin: No conflict to declare. B. Huttner: No conflict to declare. C. Combescure: No conflict to declare. P. Dayer: No conflict to declare. D. Muscionico: No conflict to declare. J.-L. Salomon: No conflict to declare. P. Bonnabry: No conflict to declare.

PP061—RECENT REFORMS IN SCOTLAND TO TAKE ADVANTAGE OF GENERICS, THEIR INFLUENCE AND IMPLICATIONS FOR HEALTH AUTHORITIES CONTEMPLATING FUTURE REFORMS

B. Godman[1,2*]; I. Bishop[3]; S. Campbell[4]; J. Miranda[5]; and M. Bennie[1,3]
[1]Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, United Kingdom; [2]Division of Clinical Pharmacology, Karolinska Institutet, Karolinska University Hospital, Stockholm, Sweden; [3]Information Services Division, NHS National Services Scotland, Edinburgh; [4]Health Sciences Research Group–Primary Care, University of Manchester, Manchester, United Kingdom; and [5]Department of Healthcare Development, Public Healthcare Services Committee Administration, Stockholm County Council, Stockholm, Sweden
Introduction: There have been variable measures introduced in Scotland in recent years to take advantage of the availability of generics in high volume classes. Consequently, there is a need to assess their influence to provide guidance to authorities for the future.
Patients (or Materials) and Methods: A mixture of retrospective observational studies and interrupted time series analyses on subsequent drug utilization (DDDs [defined daily doses]) and expenditure of the various drugs in the different classes. Only administrative databases used. Demand side measures recorded and categorized by 4Es (education, engineering, economics, and enforcement).
Results: (1) Multiple demand-side measures led to low-cost generic proton pump inhibitors (PPIs) driving the increase in utilization in recent years. PPI expenditure in 2010 was 56% below 2001 levels despite a 3-fold increase in utilization. The multiple measures saved the Scottish NHS GB£159 mn in 2010. Similarly for the statins, expenditure in 2010 was only 7% above 2001 levels despite a 6.2-fold increase in utilization. Savings through the multiple measures were estimated at GB£290 mn in 2010. There was also increasing utilization of higher strength statins following quality targets and SIGN guidance. (2) Expenditure on renin-angiotensin inhibitor drugs in 2007 was similar to 2001 with multiple reforms to limit utilization of angiotensin receptor blockers (ARBs). (3) No specific measures to enhance the prescribing of losartan (first ARB to lose its patent) versus other ARBs. This resulted in no change in the utilization of losartan postgenerics. (4) pragmatic approach to generic clopidogrel resulted in continuing high INN prescribing for clopidogrel and associated savings. (5) Measures to encourage the prescribing of generic SSRIs versus escitalopram reduced SSRI expenditure, falling by 59% between 2001 and 2007, despite increased utilization. SSRI expenditure increased in countries with limited demand-side measures. (6) No change in the utilization of risperidone postgenerics with no specific measures encouraging its use versus other atypical antipsychotics (AAPs).
Conclusion: Multiple demand-side measures appreciably enhanced prescribing efficiency in Scotland. This was helped by high INN prescribing rates (98% to 99% in all classes studied) and low costs for generics. There was no spillover effect between classes, even if closely related, to enhance the prescribing of generics first line where no active reforms (eg, losartan or risperidone). However, the complexity of treating schizophrenia and bipolar disorders may limit the potential to enhance the prescribing of generic AAPs first line where appropriate.

Study part funded by a grant from Karolinska Institutet. Majority of authors employed by health authorities or are advisers to them.
Disclosure of Interest: None declared.

PP062—VARIABLE APPROACHES IN EUROPE TO THE AVAILABILITY OF GENERIC LOSARTAN; IMPLICATIONS FOR THE FUTURE

B. Godman[1,2*]; M. Bennie[1,3]; A. Bucsics[4]; U. Hesse[5]; A. Martin[6]; J. Miranda[7]; S. Simoens[8]; C. Zara[9]; and L.L. Gustafsson[2]
[1]Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, United Kingdom; [2]Division of Clinical Pharmacology, Karolinska Institutet, Karolinska University Hospital, Stockholm, Sweden; [3]Information Services Division, NHS National Services Scotland, Edinburgh, United Kingdom; [4]HVB, Vienna, Austria; [5]National Institute for Health Data and Disease Control, Copenhagen, Denmark; [6]NHS Bury, Bury, United Kingdom; [7]Department of Healthcare Development, Public Healthcare Services Committee Administration, Stockholm County Council, Stockholm, Sweden; [8]Department of Pharmaceutical and Pharmacological Sciences, KU Leuven, Leuven, Belgium; and [9]Barcelona Health Region, Catalan Health Service, Barcelona, Spain
Introduction: Generic losartan has been available across Europe, providing opportunities for authorities to save costs as all angiotensin receptor blockers (ARBs) are seen as similar in treating hypertension and heart failure at appropriate doses. However, initiatives vary across Europe. Consequently, there is a need to assess changes in losartan utilization versus other ARBs alongside accompanying demand-side measures to provide future guidance.
Patients (or Materials) and Methods: Retrospective observational study using an interrupted time series design of patients dispensed at least 1 ARB in Austria, Belgium, Denmark, England (Bury PCT), Scotland, Spain (Catalonia), and Sweden up to 3 years before generic losartan was reimbursed and to up 3 years after. Defined daily doses and only administrative databases were used. Demand-side measures were recorded under the 4Es (education, engineering, economics, and enforcement). Prices for generic losartan were also recorded.
Results: There was appreciable variation in health authority activity. This ranged from delisting of all other ARBs from the reimbursement list in Denmark; easing of prescribing restrictions for losartan but not for other ARBs in Austria and Belgium; and formularies, incentive programs, and therapeutic switching in NHS Bury and Sweden, to no targeted activities in Spain or Scotland (due to other activities and other ARBs shortly losing their patents). Significant changes were seen in losartan utilization in Denmark (losartan 93% of total ARBs by study end), NHS Bury (losartan 65% of total ARBs by the end of the study). However, no change in losartan utilization postgenerics until active measures) and Sweden (losartan 40% of total ARBs).

Significant but lesser changes in losartan utilization were seen in Austria and Belgium. There was no change in losartan utilization patterns in Scotland or Spain. Losartan typically generic at low prices, leading to appreciable increases in prescribing efficiency in NHS Bury, Sweden, Austria, and Belgium. There were some savings in Scotland with generic losartan.

Conclusion: Multiple demand-side measures appreciably enhanced ARB prescribing efficiency. This mirrors previous findings that multiple measures are need to change prescribing habits. No significant increase in losartan utilization following generics where countries have not instigated specific measures suggests authorities cannot rely on a "spillover" effect between classes to change physician prescribing habits. This is the case even with multiple demand-side activities encouraging preferential prescribing of generics in related classes. This may be exacerbated on this occasion by a more complex message; for example, away from ACEIs first line versus ARBs to ACEIs + low cost ARBs first line.

Disclosure of Interest: None declared.

PP063—CHANGES IN THE UTILISATION OF VENLAFAXINE AFTER THE INTRODUCTION OF GENERICS IN SWEDEN: IMPLICATIONS FOR OTHER COUNTRIES

B. Godman[1,2*]; M. Persson[3]; J. Miranda[4]; B. Wettermark[1,5]; C. Barbui[6]; and L.L. Gustafsson[1]

[1]Division of Clinical Pharmacology, Karolinska Institutet, Karolinska University Hospital, Stockholm, Sweden; [2]Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, United Kingdom; [3]Drug Management Department; [4]Department of Healthcare Development, Stockholm County Council; [5]Centre for Pharmacoepidemilogy, Karolinska University Hospital, Solna, Stockholm, Sweden; and [6]WHO Collaborating Centre for Research and Training in Mental Health and Service Evaluation, Department of Public Health and Community Medicine, Section of Psychiatry, University of Verona, Verona, Italy

Introduction: The availability of generic venlafaxine is an opportunity for health authorities to save resources given the prevalence of depression. However, depression can be complex to treat, with physicians reluctant to change prescriptions if patients are responding to a particular antidepressant. Consequently, there is a need to assess: (1) changes in the utilization pattern of venlafaxine versus other newer antidepressants before and after the availability of generic venlafaxine and before and after prescribing restrictions were introduced for duloxetine in Sweden limiting prescribing to refractory patients; (2) utilization of generic versus originator venlafaxine; and (3) price reductions for generic venlafaxine and subsequent expenditure on newer antidepressants over time, to guide future reforms.

Patients (or Materials) and Methods: Interrupted time series analyzing the changes in aggregated dispensed prescriptions (DDDs [defined daily doses]) of patients dispensed at least 1 of the newer antidepressant from January 2007 to August 2011. This included time before the availability of generic venlafaxine to 19 months after the availability of generic venlafaxine but before prescribing restrictions introduced for duloxetine and to 13 months after prescribing restrictions were introduced for duloxetine. Expenditure measured, which included price reductions for generic venlafaxine over time.

Results: There was no appreciable change in the utilization of venlafaxine after generic availability but before prescribing restrictions for duloxetine with no appreciable demand-side activities by the regions (counties) to preferentially encourage its prescribing. However, the utilization of venlafaxine significantly increased after the introduction of prescribing restrictions for duloxetine, although no appreciable change in the utilization of duloxetine. Principally, generic venlafaxine was prescribed and dispensed versus the originator once available. There was an appreciable fall in expenditure for venlafaxine following generics that lead to a fall in expenditure for newer antidepressants in Sweden after generic venlafaxine became available.

Conclusion: No apparent concerns with generic venlafaxine among physicians versus the originator. Multiple demand-side measures are needed to change physician prescribing habits. Authorities cannot rely on a "spillover" effect between classes to change physician prescribing habits. The limited influence of prescribing restrictions on the subsequent utilization of duloxetine reflects the complexity of the disease area versus treating acid-related stomach disorders, hypercholesterolemia, or hypertension. However, the influence of the prescribing restrictions for duloxetine resulting in increased utilization of venlafaxine is encouraging.

Funding Source: The project was part funded by a grant from the Karolinska Institutet

Disclosure of Interest: None declared.

PP064—AGRANULOCYTOSIS DETECTION OUTCOME BY CLOZAPINE TREATMENT (ADOC STUDY) IN PSYCHIATRY: A COST-EFFECTIVENESS STUDY

F.R. Girardin[1,2*]; A. Poncet[3]; M. Blondon[3]; V. Rollason[4]; N. Vernaz[3]; P. Dayer[3]; and C. Combescure[3]

[1]Division of clinical pharmacology and Toxicology, University Hospital of Geneva (HUG); [2]Medical and Quality Directorate, University Hospitals of Geneva; [3]HUG, Geneva, Switzerland; and [4]Division of clinical pharmacology and Toxicology, HUG, Geneva, Switzerland

Introduction: White blood cell (WBC) monitoring is mandatory in several countries among schizophrenic patients treated by clozapine, because of the risk of drug-induced agranulocytosis. Our aim is to compare the cost-effectiveness of 4 WBC- monitoring strategies (United Kingdom, United States, Switzerland, and an weekly short-run monitoring) to the absence of monitoring.

Patients (or Materials) and Methods: We built a semi-Markovian model to conduct a cost-utility analysis from a health care perspective with a 3-year time horizon, assuming a probability of agranulocytosis of 0.7% at 3 years. Clinical and resources used parameters were based on national clozapine patients' registries, cohorts, and Swiss pharmacovigilance data; health-related quality of life and mortality estimates were derived from literature reviews. Model uncertainty was was assessed with 1-way and probabilistic sensitivity analyses.

Results: In our model, compared with the absence of monitoring, all 4 monitoring strategies increased the quality-adjusted survival similarly by <1 day, with 5000 patients to monitor to avoid 1 death. The incremental cost-effectiveness ratio (ICER) was at least $1,000,000 per QALY gained for all 4 strategies compared with no monitoring. It was higher in strategies with higher frequency and longer monitoring duration. The results remain robust in the 1-way sensibility analyses and the probabilistic sensitivity analysis, indicating that the absence of monitoring strategy had the highest probability of cost-effectiveness for willingness-to-pay under $1,000,000.

Conclusion: Current WBC monitoring based on current national detection guidelines do not appear to be cost-effective. New guidelines are needed to improve WBC monitoring in schizophrenic patients receiving clozapine.

Disclosure of Interest: None declared.