negative binomial regression model, controlling for age, gender, race/ethnicity, income education, general physical and mental health and co-morbidity burden. In 2014 depending on family income and employment status, the uninsured will either obtain private or Medicaid insurance coverage, thus the analysis was restricted to individuals less than 65 years with 12 months of continuous private or Medicaid converge or uninsured for the whole year. Our study sample was nationally representative on behalf of 71.3% of US population. **RESULTS:** Five measures of health care utilization were used (emergency room (ER) visits, outpatient visits, office visit, inpatient visits, prescription use). Uninsured individuals had lower utilization for all health care services except ER visits. Holding everything else constant, the uninsured will have 1.98 (1.75-2.25) and 1.61 (1.24-2.1) times higher expected rate of office based visits, 2.39 (1.81-3.15) and 2.62 (1.41-4.86) times higher expected rate of outpatient visits, 2.17 (1.58-2.97) and 1.70 (1.11-2.62) times higher expected rate of inpatient visits, 1.70 (1.53-1.89) and 1.92 (1.57-2.34) times higher expected rate of prescribed medication use after obtaining private or Medicaid coverage, respectively. **CONCLUSIONS:** Health care reform will increase the demand for health services and prescribed medications, except ER use for the uninsured. These results may be used by various stakeholders to estimate expected changes in health care expenditures.

PHP96

REASONS FOR REJECTION OF PRO LABEL CLAIMS: AN ANALYSIS BASED ON A REVIEW OF PRO USE AMONG NEW MOLECULAR ENTITIES AND BIOLOGIC LICENSE APPLICATIONS 2006-2010

DeMuro C[1], Clark M[2], Mordin M[2], Evans E[1], Copley-Merriman K[2], Fehnel SE[1], Gnanasakthy A[3]
[1]*RTI Health Solutions, Research Triangle Park, NC, USA,* [2]*RTI Health Solutions, Ann Arbor, MI, USA,* [3]*Novartis, East Hanover, NJ, USA*

OBJECTIVES: Previous analyses of PRO label claims concentrated only on successful label claims. The goal of this research was to explore the reasons why PRO label claims were either denied or not sought. **METHODS:** Using the FDA Drug Approval Report Webpage, all approved new molecular entities (NMEs) and biologic license applications (BLAs) between February 2006 and December 2010 were identified. For identified drug products, medical review sections from publicly available summary basis of approvals (SBAs) were reviewed to identify PRO endpoint status and any FDA Study Endpoints and Label Development comments. **RESULTS:** Out of the 116 NMEs/BLAs identified and accompanying SBAs reviewed, 44.8% of products included PROs as part of the pivotal studies; however, only 24.1% received PRO claims. Primary reasons for denial (where data available) included a lack of demonstration of content validity (inclusive of general measures such as the EQ5D and SF-36) as well as use of PROs to assess symptoms in an open-label setting, lack of consensus on clinically meaningful change, interpretation of or missing PRO data, lack of measurement of full constellation of symptoms, issues of multiplicity and concerns of "bias" in certain PRO measures. **CONCLUSIONS:** Nearly half (45%) of submissions included PROs yet this rate is not reflected by claims granted. Understanding the nature of PRO claims granted under the current regulatory guidance is important. Additionally, a clear understanding of claims denied yields valuable insight into where sponsors may improve implementation of PROs in clinical trials and the PRO evidence submitted in order to increase the likelihood of obtaining PRO label claims.

PHP97

PRO LABEL CLAIMS: AN ANALYSIS BASED ON A REVIEW OF PROS AMONG NEW MOLECULAR ENTITIES AND BIOLOGIC LICENSE APPLICATIONS 2006-2010

Mordin M[1], Clark M[1], DeMuro C[2], Evans E[2], Copley-Merriman K[1], Fehnel S[2], Gnanasakthy A[3]
[1]*RTI Health Solutions, Ann Arbor, MI, USA,* [2]*RTI Health Solutions, Research Triangle Park, NC, USA,* [3]*Novartis Pharmaceuticals, East Hanover, NJ, USA*

OBJECTIVES: Wilke and colleagues (2004) previously conducted a review of effectiveness endpoints reported in the labels of new drug products approved in the United States (US) between 1997-2002 to determine the extent and type of PRO endpoints utilized. They reported that 30% of product labels reviewed included PROs. Our study aimed to build upon this work by describing the current state of PRO label claims granted for new molecular entities (NMEs) and biologic license applications (BLAs) following release of the draft and final FDA PRO Guidance documents (i.e., since February 2006). **METHODS:** Using the FDA Drug Approval Reports webpage, all FDA approved NMEs and BLAs between February 2006 and December 2010 were identified. Generic products with tentative approvals granted in this period were excluded. For all identified drug products, medical review sections from publicly available summary basis of approvals (SBAs) were reviewed to identify PRO endpoint status. Product labels (indication, clinical trials sections) were reviewed to determine the number and type of PRO claims. **RESULTS:** Of the 116 NMEs/BLAs identified, 28 (24.1%) were granted PRO claims. The majority (n=24) were for signs and symptoms. Nine of the signs and symptom claims were pain-related. Of the 28 products with PRO claims, a PRO was a primary endpoint for 20 (71%). All 20 of these primary endpoints were symptom-related and the majority (12 of 20) were collected via diary. **CONCLUSIONS:** PRO claims continue to be approved by FDA, with 24% of NMEs and BLAs granted PRO claims. Successful PRO label claims over the past five years have been largely in support of treatment benefit for symptoms specified as primary endpoints. The proportion of NMEs with PRO label claims during the post-guidance period (24.1%) was lower than that of the pre-guidance period (30%).

PHP98

A TREND ANALYSIS OF NEW MOLECULAR ENTITIES WITHDRAWN FOR SAFETY REASONS FROM 1980 TO 2009 IN THE UNITED STATES

Seoane-Vazquez E[1], Rodriguez-Monguio R[2], Qureshi ZP[3], Szeinbach SL[4]
[1]*Massachusetts College of Pharmacy & Health Sciences, Boston, MA, USA,* [2]*University of Massachusetts, Amherst,, MA, USA,* [3]*University of South Carolina, Columbia, SC, USA,* [4]*Ohio State University, Columbus, OH, USA*

OBJECTIVES: Besides the influence of economic factors, prescribing patterns, and market dynamics, decisions to withdraw products from the market are driven by concerns over safety. This study evaluated new molecular entities (NMEs) approved by the FDA in the period 1980-2009 that were withdrawn from the market for safety reasons. **METHODS:** Data were obtained from the FDA and the US Federal Register. Descriptive analyses were used to classify product discontinuations by therapeutic category, year, and reason for discontinuation. **RESULTS:** There were 740 NMEs approved by the FDA during the study period. As of December 1, 2010, the number of drugs discontinued was 118 (15.9%). Safety was the reason for withdrawing 27 (3.6%) drugs from the market. Therapeutic categories with the most safety withdrawals as a percentage of approvals in the 1980s were respiratory (28.6%), musculo-skeletal (23.1%), and nervous system (7.4%). During the 1990s, classes with the most safety withdrawals as a percentage of approvals were musculo-skeletal (18.8%), alimentary tract and metabolism (12.0%), and blood and blood forming organs (7.7%). Therapeutic categories affected by safety withdrawals as a percentage of approvals in the 2000s were musculo-skeletal (20.0%), alimentary tract and metabolism (4.2%), and antineoplastic and immunomodulating agents (3.2%). Major problems that spurred safety withdrawal were hepatic toxicity, severe cardiovascular effects, and gastrointestinal issues. Average time from approval to safety withdrawal was 5.9 (SD = 5.0) years, with a range of 0.3-18.2 years, and a 95% CI of 4.0-7.8 years. **CONCLUSIONS:** Approximately one in seven NMEs approved in the period 1980-2009 was discontinued from the market. Less than one-quarter of the discontinuations were attributed to safety reasons. Products remained in the market for an average of six years before safety withdrawal. An ongoing evaluation of new drugs through their product life cycle is important to determine their long-term safety and value to society.

PHP99

WILL BIOPHARMACEUTICAL INNOVATION STILL BE A PICTURE OF HEALTH AFTER IMPLEMENTATION OF HEALTH CARE REFORM?

Ross KD
University of Washington, Seattle, WA, USA

OBJECTIVES: To determine what impact shortening or lengthening the data exclusivity period (DEP) for biologic drugs has on innovation. As a part of this, the goal is to determine what effects on innovation the 12-year DEP included in healthcare reform will have. **METHODS:** A simulation model is developed to assess the profitability of candidate drugs under varying DEPs. All costs and revenues are discounted. The drugs are then grouped into 10-drug portfolios and the profitability of each portfolio is determined. The percentage of portfolios that are profitable under each DEP length is divided by the percentage of portfolios that are profitable under a indefinite DEP to give a relative level of innovation. **RESULTS:** A DEP of 0 years yields a 60% decrease in the level of innovation and there are no increases in innovation for DEPs above 34 years. For a DEP of 12 years, there is an expected 8.1% decrease in the level of innovation. **CONCLUSIONS:** The 12-year DEP implemented as a part of healthcare reform is likely to decrease innovation in biologic drugs. The expected 8.1% decrease in innovation may or may not be worth the expected decrease in prices once biosimilar competitors enter. The model also indicates that there would be no returns to innovation by increasing DEP above 34 years, and as such, it is likely that this would represent a maximum when selecting a DEP.

PHP100

PRICING AND REIMBURSEMENT OF ORPHAN DRUGS IN CANADA

Kumar J, Bachman EM
HERON Evidence Development LLC, Somerville, NJ, USA

OBJECTIVES: The Canadian Organization of Rare Diseases (CORD) defines a rare disease as one that afflicts less that 1 person in 200 000. Significant market access and pricing challenges exist for ODs in Canada both at a federal and the provincial level. The scope of this study is to describe the ODs regulations in Canada, evidence requirements by the national regulatory agency, national and regional funding criteria, market access challenges associated with ODs, and approaches to obtain access to ODs in Canada. **METHODS:** Non-systematic PubMed search, Health Canada, the Canadian Agency for Drug and Technology in Health (CADTH), Common Drug Review (CDR), Canadian Organization of Rare Diseases (CODR) and different provinces Ministries of Health websites. **RESULTS:** Health Canada reviews ODs to ensure that the drug meets the criteria of efficacy, safety, and manufacturing quality. The CDR conducts the clinical and cost effectiveness review compared to existing therapies and makes positive or negative recommendations to provinces to list ODs in their respective formularies. At the federal level, pricing of ODs is regulated by Patented Medicine Pricing Review Board (PMPRB). At the provincial level, different provinces can make their own independent reimbursement decision irrespective of CDR's recommendation. Due to the large budget impact of ODs, most provinces do not provide access. The specialized access mechanism, criteria for eligibility, extent of coverage, and different data requirement to obtain access in three important provinces of Canada (Ontario, Alberta, and Quebec) will be discussed in the poster. **CONCLUSIONS:** In the absence of a national orphan drug policy, patients suffering from rare diseases face challenges in obtaining access to ODs in Canada. However, significant opportunities exist for manufacturers to provide access to ODs in Canada.