ages ranged from 0.83% to 2% respectively. All-cause healthcare Per Patient Per Year costs were approximately $13,200 in each database. **CONCLUSIONS:** Creation of a database using a CDM approach allows for simultaneous examination of standardized claims across databases, thus broadening the efficiency and generalizability of retrospective claims analyses. The diversity of comorbidities among IGV patients combined with the evolving treatment landscape makes it an ideal candidate for this type of research.

**PRM45**

**BIG DATA IN EMERGENCY DEPARTMENT CARE DELIVERY: BENEFITS OF RADIO FREQUENCY IDENTIFICATION**

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**OBJECTIVES:** Lack of a coordinated primary care system is forcing individuals to seek emergency departments (EDs) as gateway into the health system. As volumes increase in census data, the capacity of emergency care becomes more crucial. In a coordinated downstream capacity lead to boarding, bottlenecks and wait times. The goal was to review benefits of Radio Frequency Identification (RFID) demonstrated in the literature in the ED. **METHODS:** Article searches were conducted and they were categorized based on benefits in three areas: patients, staff, assets. **RESULTS:** Evidence of use of RFID in ED went as far back as 2006 with both domestic and international applications mostly using active technology. Majority of the articles demonstrated reducing wait times in the ED. One of the articles in turn demonstrated impact on patient satisfaction. Reduction in wait times were demonstrated when admitting patients into ICU from the emergency setting. In case of staff, use of RFID demonstrated increased satisfaction in a pediatric emergency setting. Evidence also exists in better treatment of patients and equipment in the ED. Very little evidence of use of RFID in simulation and analytical models exist. Most of the studies were retrospective in nature. Wait times and asset tracking are tangible benefits with direct impact on return on investment. **CONCLUSIONS:** RFID has been used in various settings in healthcare and quality benefits have been demonstrated. Lesser evidence of RFID use in the ED exists. RFID benefits have primarily been demonstrated regarding wait to ward tracking and management and the potential benefits for ED patient tracking are more intangible benefits. As EDs start to reap benefits with wait times, use in simulation and advanced analytical models could potentially inform workload, team configuration and team dynamics studies. As healthcare moves into the era of big data, live streaming RFID data can be tapped for real-time decision making.

**PRM46**

**WHY PEER-REVIEW JOURNALS REJECT REAL-WORLD AND HEALTH-ECONOMIC PAPERS**

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**OBJECTIVES:** To evaluate the most common reasons provided by peer-reviewed journals to reject manuscripts describing data derived from real-world or health-economic (RW/HE) studies. **METHODS:** Our company project administration records from the last 10 years were reviewed for manuscripts describing HE studies, RW/observational studies (including retrospective database analyses), and patient or disease registries. Reasons for rejection were collected and stratified into “categories”. If more than one reason was provided by the journal, then all reasons were counted. Our analysis was based on industry-sponsored manuscripts for which a complete submission history was available. **RESULTS:** Rejection letters were valuable for identifying reasons. The distribution of several variables were analyzed and compared to available literature. Part of these variables refers to physician’s practices participating in the database while others refer to patients in these practices. Data on prevalence, treatments, and patients’ profile were retrieved from published French Health Authority studies and from French databases. **METHODS:** The sampling methods for the physician’s selection practices were shown to be a good representativeness of the physician panel. Analyze of the patients population showed that LPD included all the subsets of the French general population, although pediatrics were underrepresented. Prevalences of several illnesses (diabetes, asthma, atrial fibrillation, aortic aneurism), treatments (dyslipidemia, diabetes), patients’ profiles (dyslipidemia, atrial fibrillation, venous disease) were in agreement to those encountered in literature. However, smoking status, hospitalizations, referral to specialists were only partially reported and no information was available about sociodemographic status or death of patients. The availability of missing information through the use of questionnaires/pop up screens for physicians and patients, and the linkage of the EMR database to a claims database (HEAD) is also documented. **CONCLUSIONS:** We found no indications of lack of representativeness or validity of this database. While presenting some gaps identified. Six physicians from major Spanish Transplant centres then com-
pleted the questionnaire online. A qualitative analysis of the data, using a combination of deductive (based on literature) and inductive (based on expert opinion) approaches were performed using NVivo10 Software. RESULTS: A hierarchical structure of 100 nodes was designed around 2 main themes: LALT and chronic graft-rejection. According to expert interviews, LALT is a common issue that can have significant health consequences. The main drivers of adverse events were the number of pills and incidence of adverse events. The main consequences identified by the experts were antibody mediated graft-rejection and decreased graft survival. CHR was identified as the second most common cause of graft rejection between 2-3 years post-transplant, behind death with a functioning graft. LALT could cause up to 50% of CHR. There is no consensus on treating CHR, but therapies include intravenous immunoglobulins, rituximab and plasmapheresis. Other health resource used included: at least one diagnostic renal biopsy, 2-fold increase in the number of visits, a higher risk of hospitalization due to complications (infections, heart-failure and anaemia) and preparation for return to dialysis. Most CHR episodes resulted in graft failure. Survival analysis with high allele frequency in the final haplotype. Poor adherence is considered a preventable but frequent cause of CHR and graft loss. Treatment simplification and education could improve adherence and burden of disease for KT patients.

RESEARCH ON METHODS – Modeling Methods

PRM51 REPLICATION OF A PUBLISHED MARKOV CHRONIC MALIGNANCE COST-EFFECTIVENESS MODEL FOR PURPOSES OF EARLY PHASE ADAPTATION AND ADJUSTMENT
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OBJECTIVES: We published a cost-effectiveness analysis (CEA) model, especially those which have been submitted to health technology assessment (HTA) authorities, are valuable in early phase CEAs of interventions in the same or similar disease areas. The documented Markov models can be difficult to replicate. Additionally, differences in disease states, treatment effects, and patient populations can render a successfully replicated Markov model non-informative for early phase investigations. As a basis for future adaptation and expansion, a published chronic malignant disease Markov model was replicated in TreeAge Pro 2014 as both a Markov model and as an individual-based state-transition (Monte Carlo microsimulation [MCm]) model.

METHODS: The published and replicated Markov model results were compared for both base case and sensitivity analyses. Patient subgroup Markov transition probability (MTP) matrices were implemented in the MCm, with assumptions regarding unpublished information on post-initial cycle state transitions. These assumptions involved subgroup treatment effects, patient decision discontinuation, and treatment stopping rules. The overall patient population (OPP) MTP matrices generated by the MCm were loaded into the Markov model to assess the validity of the assumptions. RESULTS: Incremental costs and quality-adjusted life-years (QALYs) between intervention with onabotulinumtoxinA and placebo were produced. Differences between published and replicated Markov model incremental cost and QALY results were small for the base case (0.0%, -1.9%). Base case differences between published and replicated Markov model (using MCm-derived OPP MTP matrices) incremental cost and QALY results were larger but acceptable (5.2%, 11.7%). This reflects the assumptions involved with subgroup transitions in the patient subgroup MTP matrices. CONCLUSIONS: The study demonstrates how a published model can be replicated and adapted for early phase CEAs investigations, allowing for modeling of OPPs, treatment effects, treatment discontinuation, etc. that differ from the published model.

PRM52 RECONSTRUCTION OF INDIVIDUAL PATIENT DATA BASED ON PUBLISHED KAPLAN-MEIER CURVES: CASE OF REGORAFENIB FOR COLORECTAL CANCER
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OBJECTIVES: To conduct pharmacoeconomic analyses, both cost and effectiveness data are required. Randomized controlled trials (RCTs) are often used as a source of efficacy data. As RCTs are often of short duration, efficacy data need to be extrapolated beyond the trial follow-up period to be fit for use in model-based pharmacoeconomic evaluations. However, RCTs usually report effectiveness data in terms of Kaplan-Meier (KM) estimates. As a result, researchers need to reconstruct individual patient data (IPD) from published KM curves of trials’ treatment arms to estimate their long-term effects. This study aims to reconstruct the survival benefits of regorafenib monotherapy for previously treated metastatic colorectal cancer (CORRECT), an international, multicentre, randomized, placebo-controlled, phase 3 trial.

METHODS: An algorithm developed by Guyot and colleagues was adopted to reconstruct IPD using R statistical package, based on the overall survival KM curves of the CORRECT trial. The reconstruction of IPD included the following steps: (1) the KM curves from published KM curves; (2) KM curves for 2 sets of 9 years survival data, (3) creation of a second dataset, and application of the algorithm. The results of the original trial were compared to the reconstructed data using graphical and quantitative methods, for validation purposes.

RESULTS: Based on the IPD reconstruction, 162 and 88 events occurred in the regorafenib and placebo groups respectively. The median overall survival time in the regorafenib arm was 6.5 months (95% CI 5.83, 8.43) which is about the same as the original trial (6.4 months). In the placebo group, the median overall survival for the reconstruction data was 5.09 months (95% CI 4.30, 6.81) compared to the trial median survival of 5.0 months.

CONCLUSIONS: The results of this study can be utilized to estimate transition probabilities for model-based pharmacoeconomic evaluations in the absence of individual patient data (IPD).

PRM53 CHOICE OF DISTRIBUTIONAL ASSUMPTIONS IN META-ANALYSIS FOR THE EVALUATION OF SURROGATE ENDPOINTS
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OBJECTIVES: To evaluate the health technology assessment meta-analysis was used to combine evidence from a number of studies to inform the decision-making process. When evaluating new health technologies at early stages of their development, treatment effect on surrogate endpoints may be used to predict the effect on the final outcome that otherwise requires long follow-up time. Meta-analysis of multiple outcomes which takes into account the correlations between them is particularly suitable for modelling surrogate endpoints. The aim of this study was to investigate the choice of distributional assumptions when developing meta-analytic methods for evaluation of surrogate endpoints.

METHODS: Two bivariate meta-analytical models are applied to a case study in chronic myeloid leukemia when evaluating the impact of tyrosine kinase inhibitors (TKI) on cytogenetic response (CCYR) rate at 12 months is a surrogate endpoint. A normal model and log relative risk scale for both outcomes is applied to evaluate CCYR as a surrogate endpoint for OS. This model is then extended by relaxing the assumption of normality on the distribution for biological differences for better fit.

RESULTS: The effect on CCYR was a significant predictor of the effect on OS. Both models gave similar results for the effect of CCYR on OS. However, the heterogeneity parameter was larger in the binomial model (z = 2.09 with 95% CrI: 0.0 to 5.2) compared to normal case (z = 0.07 with 95% CrI: 0.0 to 0.39).

CONCLUSIONS: The results of both models were similar for this case study. However, the choice of distributional assumptions can lead to different estimates of the effect on the final outcome in other disease areas. This means that the normality assumption is not suitable and consequently this can impact on HTA decisions.