identified with at least 1 ICD-9 code specifying narcolepsy (NDX), each randomly matched to 5 controls (no NDX; n=46,559). A sequential validation process compared claims-measurable outcomes (health care utilization, 7 known narcolepsy-associated comorbidities) in the 1 NDX population (n=4,587) against groups having 2-4 NDX (n=2,894) and 5+ NDX (n=1,831), comparing groups to each other and to their matched controls. Additional comparisons were made to a reference group with the least ambiguous symptom (cataplexy) and an NDX persisting subsequent to in-period diagnostic testing (n=465). **RESULTS:** 1-way ANOVA showed consistently higher utilization among narcolepsy patients compared to controls [all P< 0.001] and equivalent utilization between narcolepsy patients, irrespective of the number of reported NDX [all P> 0.05], except patients with 1 NDX vs. 5+ NDX (P = 0.047). Similarly, chi-square analysis showed high coherence in comorbidities among NDX groups and significant differences vs. controls. In sum, patients with a single NDX were highly similar to patients with more narcolepsy diagnosis codes and consistently unlike control patients without narcolepsy. Statistical differences observed between single NDX patients and the cataplexy subgroup with in-period testing will be addressed. **CONCLUSIONS:** The sequential validation process supported inclusion of subjects captured by a single diagnosis code in a burden of illness study. This approach may prove useful in developing inclusion criteria for claims-based studies of other rare or chronic diseases.

PRM127

DOES THE USE OF A SURROGATE OUTCOME IN SOLID STATE ONCOLOGY HTAS DECREASE THE CHANCES OF POSITIVE RECOMMENDATIONS?

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OBJECTIVES: Both the FDA and the EMA accept Progression-free Survival (PFS) and Disease-free Survival (DFS) as appropriate surrogate outcomes for Overall Survival (OS) in clinical trials, but does using PFS or DFS decrease the chances of a positive recommendation from Health Technology Assessment (HTA) agencies? **METHODS:** HTA assessments from 10 agencies between 2005 and 2013 for 6 solid-state oncology conditions were analyzed. Reviews were grouped by primary outcome as follows: OS, PFS, co-primary outcomes, DFS and other. HTA recommendations were categorized as positive or negative. **RESULTS:** A total of 245 reviews were analyzed. Reviews that did not report a primary outcome were excluded (17%). The use of primary outcome was highly dependent on the cancer. OS was overwhelmingly used in melanoma and small-cell lung cancer, while PFS was used in ovarian cancer. Due to the lack of variety in the primary outcome used in these cancers, rates of positive recommendations associated with the choice of primary outcome could not be calculated. Colorectal cancer (CC) used PFS, OS and DFS at similar rates (25%, 26% and 22% respectively; n=68); Non-small cell lung cancer (NSCLC) used OS and PFS at similar rates (44% and 36% respectively; n=61). The majority of prostate cancer (PC) reviews used OS (66%), but 32% used other outcomes (mostly related to measuring testosterone levels; n=38). There was no statistical difference between the use of outcomes and the rate of positive recommendation in CC, NSCLC or PC. **CONCLUSIONS:** The choice in primary outcome was dependent on the oncology condition. The relationship between choice in primary outcome and reimbursement recommendation was not significant for oncology conditions that used a variety of outcomes. Further research and multivariate analysis is needed to determine if the choice of a surrogate outcome in oncology HTA reviews decreases the chances of a positive approval.

PRM128

CRITICAL APPRAISAL OF NON-RANDOMIZED CONTROLLED TRIALS – A REVIEW OF RECOMMENDED AND COMMONLY USED TOOLS

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OBJECTIVES: In the absence of randomized controlled trials (RCTs) and to verify RCT evidence, health technology assessment (HTA) agencies commonly rely on non-RCTs to provide evidence of the effectiveness of health care interventions. This type of study design can introduce considerable bias into a systematic review and a number of methodologies exist to evaluate the risk of bias in such studies. We undertook a series of reviews to identify which tools are commonly used in the literature and in an HTA setting for critical appraisal of non-RCTs. **METHODS:** Firstly, a targeted search of systematic reviews including non-RCTs was conducted in MEDLINE and EMBASE (OVID SP). Studies identified were reviewed to determine which appraisal tool, if any, was used. Secondly, recommendations for the critical appraisal of non-RCTs by expert review groups (Cochrane, Centre for Reviews and Disseminations (CRD)) and HTA bodies (including NICE, SMC, NCPE, AWMSG, IQWiG, PBAC, AMCP and CADTH) were reviewed. Criteria covered by each tool were recorded. **RESULTS:** 446 studies were identified by the targeted search and were screened. We identified a large number of critical appraisal tools. Commonly used tools included Downs & Black, Chalmers, the Newcastle-Ottawa Scale, and the CriSTal checklist. Neither the Cochrane Collaboration nor CRD recommend a particular risk of bias instrument. Only one HTA body, CADTH, recommend use of a specific critical appraisal tool; SIGN 50 (for cohort or case-control studies). The tools identified examine a variety of criteria including reporting, external validity, bias, confounding, power and temporal parallelism. **CONCLUSIONS:** There is a lack of consensus on a preferred instrument that allows for the assessment of all types of non-RCT evidence. As a result, critical appraisal of non-RCTs is often omitted from HTA submissions. There is thus a need for cross communication between groups to reach a consensus and develop a suitable tool.

PRM129

HYBRID TIME AND MOTION, PATIENT SURVEY AND CHART REVIEW STUDY METHODOLOGY: A CASE STUDY OF SUBCUTANEOUS ALLERGEN IMMUNOTHERAPY IN THE UNITED STATES AND CANADA

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OBJECTIVES: Direct observation of health care processes through time and motion (T&M) studies is increasingly warranted to provide evidence of medication or device efficiency. This methodology can be leveraged to collect comprehensive data on patient characteristics, and health and care process outcomes. A hybrid T&M plus patient survey & chart review study design is described through case study presentation and summary of lessons learned. **METHODS:** A prospective, observational, hybrid T&M study of subcutaneous immunotherapy (SCIT) administration was conducted at 12 sites (US and Canada). Process time and supplies consumed were collected through observation of SCIT visits and serum preparation. Chart reviews provided medical history and resource utilization; trained observers collected socio-odemographics, loss of productivity, medication use, and travel time by survey. Site staff estimated time for administrative tasks related to SCIT. **RESULTS:** Key considerations for study design and CRF development: comprehensive care process mapping and minimization of patient/site burden, handling treatment process variability, and maximizing generalizability of results. Site and observer recruitment, minimizing impact on treatment delivery, and ensuring uniformity of data collection methods across sites were main operational considerations. An extensive study planning process along with nurse observers utilized for data collection led to successful completion of the study at six sites/country (primary care, allergists, otolaryngologists), with 670 patients. The final robust dataset consisted of observed treatment delivery steps and timings for staff and patients at SCIT visits (2-8 and 4-32 min respectively, plus 2-33 min post-injection wait), patient-reported travel times (34-50 minutes), and detailed information regarding number/type of allergens per patient through chart review. **CONCLUSIONS:** T&M methodology allows for prospective data collection of observed processes, providing data on process efficiency and cost drivers that are often otherwise unavailable. This approach can be successfully combined with medical chart review and patient and site questionnaires to optimize evidence generation.

PRM130

REGISTRY: ITS USE IN REAL-WORLD DATA COLLECTION

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OBJECTIVES: To understand how registries are being utilized in current post-marketing research. **METHODS:** A targeted search was conducted in MEDLINE to identify all original research published in 2013 reporting results from registries. The search was restricted to English language publications. Abstracts of relevant citations were reviewed to obtain the country of study, therapeutic area and registry design. A supplementary search of registries listed on *clinicaltrials.gov* was conducted to estimate the number of registries currently ongoing. **RESULTS:** The search returned 136 citations, containing 128 citations reporting results from 116 unique registries. Amongst the 116 registries, n=43 (37.1%) were conducted in Europe, n=40 (34.5%) in the United States, n=25 (19.8%) in Asia-Pacific and n=5 (4.3%) multi-nationally. Most registries were studies in cardiology (n=76 [65.5%]), and n=9 (7.8%) unique registries were devoted to the study of pediatric patient populations. 21.6% of the registries were designed to investigate the safety of a medical device or pharmaceutical agent, and another n=34 (29.3%) aimed to evaluate clinical outcomes of surgical interventions. According to *clinicaltrials.gov*, there are 747 registry studies that are currently in active recruiting, or planning status. At the time of this review, 410 registries are active in North America and 247 in Europe. **CONCLUSIONS:** The purpose of the present review was not to perform an exhaustive summary of all registries but to gain a snapshot of what has been published in a given, recent year. Results of this review confirm that different registry designs are being used in real-world data collection to meet specific research objectives, be it safety monitoring, understanding disease natural history or long-term clinical outcome evaluation. Further analysis into the study characteristics will be presented to guide stakeholders in choosing appropriate registry designs.

PRM131

NOVEL APPROACHES TO PATIENT RECRUITMENT AND DATA INTEGRATION

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OBJECTIVES: Increasingly, value demonstration evidence requirements cannot be addressed with a single data source and/or methodology. The objective of this research is to present, using case studies to illustrate, a strategic and step-wise approach for the development of optimal study designs to address research questions which warrant multiple data sources including primary or secondary sources of real-world data. **METHODS:** Steps followed in the conceptualization of designs that integrate multiple data sources include: the identification and prioritization of research questions, delineation of evidence gaps and potential data sources, assessment of data availability by source and feasibility of data integration, study synopsis development, data protection and legal reviews, and study protocol development. **RESULTS:** In the first case example, the purpose of the study was to understand reasons why patients discontinue therapy for a rare disease. Due to the orphan drug status, multiple data sources were needed to identify and recruit subjects to participate in the study. A second case study combined the use of a patient support program database to identify potential subjects, drug dispensing data from a specialty pharmacy to assess medication adherence, and a longitudinal patient survey assessing disease activity and patient satisfaction. Finally, two studies were designed (1 observational, 1 interventional) which utilize pharmacy claims data to identify potential subjects and evaluate medication adherence during the study period. This data is linked with longitudinal patient surveys evaluating topics including treatment experience, reasons for non-adherence, and experience of adverse events. **CONCLUSIONS:** These case studies demonstrate a novel approach to study design from within a single research network, whereby data from multiple