OBJECTIVES: Clinical trials have shown that ranibizumab is efficacious in improving vision among patients with AMD. The objectives of this study are to: 1) evaluate whether as needed (PRN) is as effective as monthly treatment; and 2)compare the efficacy of ranibizumab 0.5mg treatment with: a)control; b)ranibizumab 0.3mg; and c)bevacizumab. **METHODS:** This is a systematic meta-analysis review of 8 randomized controlled clinical phase III or IV trials with a minimum of one year follow-up that investigated the efficacy of ranibizumab in treating AMD. The dependent variables were effect sizes of visual acuity gained and odds ratios of percentage of patients who gained ≥15 visual acuity letters. Weighted multiple regression analyses were used to compare the monthly versus PRN treatment. **RESULTS:** Regression results showed no significant differences in efficacy between PRN and monthly treatment. The ranibizumab to control (placebo injection/surgery) comparison (4 effect sizes, 4 odds ratios, N=1047): showed that ranibizumab had significantly higher improvement in visual acuity (g=1.20, z=7.83, p<0.05) and a higher proportion of patients who gained ≥15 letters (OR: 6.37; 95% CI 3.96-9.98; p<0.05). When comparing ranibizumab dose (6 effect sizes, 5 odds ratios, N=3449): ranibizumab 0.5mg showed significantly higher improvement in letters gained (g=0.08, z=2.34, p<0.05) than ranibizumab 0.3mg. However, the proportion of patients who gained ≥15 letters was not significantly different. The ranibizumab to bevacizumab comparison (3 effect sizes, 3 odds ratios, N= 800) revealed no significant differences. **CONCLUSIONS:** Ranibizumab 0.5mg was found to be more effective than control and ranibizumab 0.3mg. Monthly treatment was not significantly different from PRN. More clinical trials are needed to compare the efficacy of ranibizumab and bevacizumab.

PSS3

THE BURDEN OF GLAUCOMA AND ITS COMPLICATIONS: A LARGE POPULATION-BASED COHORT STUDY

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OBJECTIVES: To investigate the burden and epidemiology of glaucoma in a large health maintenance organization (HMO) in Israel. **METHODS:** A retrospective cohort study, conducted using the electronic medical databases of Maccabi Healthcare Services (MHS), a 2 million member HMO in Israel. The study population consisted of all patients who were newly diagnosed with glaucoma between 2003 and 2010 at MHS. In addition, for prevalence calculation we included all patients who are currently (2012) active members of MHS. Collected data included personal characteristic, relevant surgical procedures, anti-glaucoma medications, caregiver characteristics, comorbidity, possible complications (asthma, depression, cardiovascular diseases, cataract) and all-cause mortality. We investigated the age- and sex-specific prevalence and incidence rates, and compared the medical comorbidity and mortality of glaucoma patients to the general HMO population. **RESULTS:** A total of 26,196 prevalent glaucoma patients aged 40 or above were identified among active members of MHS in 2012 with an average prevalence of 35 per 1000. Prevalence was strongly associated with increasing age, ranging from 7 cases per 1000 at age 45-50 to 212 per 1000 at age 85+. The 4 main prevalent pathologies among MHS population aged 40 or above were open angle glaucoma, pre or borderline glaucoma, unspecified glaucoma, and pseudo exfoliation with prevalence rates of 2%, 1.4%, 0.9% and 0.2%, respectively. A total of 11,512 incident glaucoma patients, who were diagnosed between 2003 and 2010 were identified, with an average incidence of 2.5 per 1000 among 40+ year old members. Overall, 1.5% of the study patients have undergone glaucoma surgery, 3% were blind and 41% were diagnosed with cataract. **CONCLUSIONS:** The current study demonstrates the potential use of automated medical databases to estimate the burden of glaucoma and its complications. The increased comorbidity and mortality among these patients has important implication for health authorities for prevention and delivery of health-care services.

PSS4

PREVALENCE AND INCIDENCE OF PATHOLOGIC MYOPIA AND RETINAL NEOVASCULARIZATION IN A US MANAGED CARE DATABASE

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OBJECTIVES: The epidemiology of pathologic myopia (PM), an important cause of visual impairment worldwide, is poorly understood. This study analyzed data from a large US claims database to estimate the prevalence and incidence of PM and PM + retinal neovascularization (RNV). **METHODS:** Data were drawn from the MarketScan® Commercial Claims and Encounters database and Medicare Supplemental and Coordination of Benefits in the USA. ICD9 diagnostic codes for PM (360.21) and both PM + RNV (362.16) were used to identify cases; use of the diagnostic code on at least one occasion was required. A 1-year disease-free period was required for a diagnosis to be considered an incident case. **RESULTS:** MarketScan covered 45,226,794 patients in 2011; 43,581 and 1,781prevalent cases of PM and PM + RNV were identified, representing a prevalence of 9.64 (95% CI: 9.55–9.73) and 0.39 (95% CI: 0.38–0.41) per 10,000 population, respectively. Incidence per 10,000 persons in 2011 was 2.75 (95% CI: 2.70–2.80) for PM and 0.09 (95% CI: 0.08–0.10) for PM + RNV. Subjects with incident PM had a mean age of 47.9±18.5 years, 46.5% were under 50 years old, and 62.3% were females, whereas subjects with PM + RNV had a mean age of 55.1±14.5, 30.3% were younger than 50 years old, and 71.1% were females. **CONCLUSIONS:** Prevalence and incidence estimates of PM among the commercially insured US population in 2011 were approximately 9.6 and 2.7 per 10,000 persons, respectively. PM+RNV represents approximately 3–4% of patients with PM. Using only one diagnostic code to identify cases may overestimate prevalence and incidence as there is potential to include some diagnoses that would later be ruled out as true cases. Both PM

and PM+RNV are often diagnosed in individuals younger than 50 years of age and the majority of patients are female.

SENSORY SYSTEMS DISORDERS – Cost Studies

PSS5

BUDGETARY IMPACT OF INTRAVITREAL AFLIBERCEPT INJECTION (IAI) IN TREATING NEOVASCULAR AGE-RELATED MACULAR DEGENERATION IN A US HEALTH PLAN OF ADULTS AGES 65 YEARS AND OLDER

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OBJECTIVES: Anti-VEGF therapy with ranibizumab (RBZ) dosed monthly improves visual acuity over time in patients with neovascular ("wet") age-related macular degeneration (wAMD). In two identical phase 3 trials, IAI dosed 2mg every 2 months, following 3 initial monthly doses (2Q8) demonstrated clinically equivalent efficacy and a similar safety profile to RBZ 0.5mg dosed monthly (RQ4). We assessed the budgetary impact of adding IAI 2Q8 to a formulary of a hypothetical one million member US health plan. **METHODS:** A Markov model characterized treatment with IAI 2Q8 and RQ4 over time. Health states were based on visual acuity in the better-seeing eye. Efficacy and cost estimates came from clinical trial data and published literature. The model calculated direct medical costs, including costs of drug, administration, monitoring, visual impairment, and adverse events. Ten percent of patients were assumed to be treated in both eyes. We calculated budgetary impact by comparing estimated costs over three years from current (100% RBZ market share) through future scenarios (IAI market share: Year 1, 22%; Year 2, 42%; Year 3, 51%). Model outcomes include total costs over three years in current and future scenarios, net costs, and cost per-member per-month (PMPM). **RESULTS:** In a one million member plan, 2,800 were newly treated for wAMD. Total budget was $79.2 million in Year 1, $147.9 million in Year 2 and $152.4 million in Year 3 in the current scenario, and $71.9 million, $126.5, and $121.2 million in Years 1, 2 and 3 in the future scenario. Net budget impact ranged from $-7.3 million in Year 1 to $-31.2 million in Year 3, or $0.61, $1.78, and $2.60 PMPM savings in Years 1, 2, and 3. **CONCLUSIONS:** Adding IAI 2Q8 to a US formulary saves money in the first three years, primarily due to reduced injection frequency compared to RQ4.

PSS6

COST ANALYSIS OF PARS PLANA VITRECTOMY FOR THE TREATMENT OF SYMPTOMATIC VITREOMACULAR ADHESION: A BOTTOM-UP COSTING PERSPECTIVE

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The direct cost to the NHS of pars plana vitrectomy (PPV) is unknown since a bottom-up costing exercise has not been undertaken. Health care resource group (HRG) costing relies on a top-down approach. **OBJECTIVES:** To quantify the direct cost of PPV for vitreomacular traction (VMT), epiretinal membrane (ERM) and macular hole (MH). **METHODS:** Each of five NHS vitreoretinal units recorded the indication for surgery and all procedure elements for a minimum of 30 consecutive PPVs, to include at least 10 cases of VMT, ERM, or MH. In-surgery bottom-up costing was undertaken by prospectively recording all consumables, equipment and staff salaries associated with surgery, between March and September 2012. Out-of-surgery costs, namely before and after surgery between admission and discharge, were estimated based on accounting costs recorded in one site. **RESULTS:** Of 151 PPVs, 57 were for MH (16.6%), ERM (15.2%), or VMT (4%). The average surgical time was 1.22 hours [range 0.96-1.38], corresponding to an average staff cost of £280.40 [£184.90-£376.70]. The average cost of consumables was £534.60 [£406.55-£688.85], and of equipment £87.75 [£28.10-£139.15]. The average direct cost of PPV in theatre was £901.10 [£671.00-£1185.55]. Average out-of-surgery costs were estimated at £325.35, including nursing staff, extra consumables and hospitalisation costs. This resulted in a total cost of £1673.80 [£1496.40-£1863.30], including 30% overheads. This cost estimate is considered an under-estimate because of lack of available data on departmental-level general costs, medical and anaesthetic staff costs incurred out-of-surgery. The average effective HRG tariff reimbursed was £1701.20. **CONCLUSIONS:** These figures indicate that the real cost incurred is likely to be higher than the reimbursed tariff, but it may be cost-effective for NHS hospitals to undertake additional PPVs for VMT, ERM and MH, if they can amortise existing infrastructure with a sufficient number of interventions to benefit from economies of scale.

PSS7

THE COST AND THE EDUCATIONAL IMPACT OF COCHLEAR IMPLANTATION IN CHILDREN OVER A FOUR YEAR PERIOD IN FRANCE

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OBJECTIVES: Cochlear implants (CI) are electronic devices introduced surgically into the inner ear. This is the only medical treatment for profound total deafness. CI is particularly useful in children because they can have an impact on the children education. The aim of this study is to assess the cost and the educational impact of CI in French implanted children over a four year period **METHODS:** 268 profoundly deaf children were recruited and implanted between September 2002 and December 2004 in 16 specialized French hospitals. The educational impact was assessed in children aged less than 2 years and aged over 2 years using the educational rate evolution and the type of integrated