costs. Drug acquisition cost for ustekinumab reflected the manufacturers' UK Patient Access Scheme. Incremental cost-effectiveness ratios (ICERs) were calculated and treatments were ranked relative to supportive care. One-way sensitivity analyses, using alternative plausible values for key parameters, explored uncertainty in the results. **RESULTS:** Infliximab provided the most additional quality-adjusted life-years (QALYs) vs. supportive care (0.186) followed by ustekinumab (0.174) and adalimumab (0.169). In the base case, adalimumab was the most cost-effective biologic (£19,082/QALY vs. supportive care), followed by ustekinumab (£20,964/QALY), etanercept 25 mg BIW (£26,580/QALY), etanercept 50 mg BIW during the trial period followed by 25mg BIW (£28,719 per QALY), and infliximab (£46,844 per QALY). ICERs for ustekinumab and infliximab compared with adalimumab were £87,625 and £332,015, respectively. Adalimumab remained the most cost-effective in the majority of the sensitivity analyses. **CONCLUSIONS:** In this decision-model analysis, adalimumab was the most cost-effective biologic treatment for moderate to severe psoriasis in the UK.

PSS24

A COST-EFFECTIVENESS ANALYSIS OF INGENOL MEBUTATE GEL FOR THE TREATMENT OF ACTINIC KERATOSIS: A SCOTTISH PERSPECTIVE

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OBJECTIVES: Ingenol mebutate gel is a recently developed, topical, 2 or 3 days patient-administered AK therapy. The objective was to compare the cost-effectiveness of ingenol mebutate gel with diclofenac gel and other available therapies for the first-line treatment of AK in adult patients, from the perspective of the National Health Service (NHS) in Scotland. **METHODS:** A cost-utility analysis was conducted using a decision tree approach to calculate the costs and benefits of different treatment strategies for AK over a 12-month time horizon. Data on the relative efficacy of treatment was derived from a systematic review of RCTs and a subsequent mixed-treatment comparison (MTC). Utility scores and resource use data were obtained from published sources. Due to the uncertainty surrounding the impact of AEs on HRQoL and costs, AEs were modelled in a scenario analysis. **RESULTS:** In the primary comparison, ingenol mebutate 150 mcg/g gel and 500 mcg/g gel were associated with ICERs of £44 and £114 per QALY gained, respectively compared with diclofenac (3%) for 8 weeks and £36 and £74, respectively compared with diclofenac (3%) for 12 weeks. In the secondary comparisons, ingenol mebutate 150 mcg/g gel and 500 mcg/g gel were associated with ICERs of £47 and £134, respectively compared with 5-FU/salicylic acid (0.5%/10%) cutaneous solution and dominated cryotherapy (i.e. were cheaper and more effective). Ingenol mebutate 150 mcg/g gel and 500 mcg/g gel were cheaper and less effective than 5-FU (5%) cream. Ingenol mebutate 150 mcg/g gel, but not ingenol mebutate 500 mcg/g gel, was cost-effective assuming a decision making willingness-to-pay threshold of £20,000/QALY (for one additional QALY gained, there would be an incremental cost of £26,525 incurred for 5-FU (5%) cream vs ingenol mebutate gel). **CONCLUSIONS:** Ingenol mebutate gel is a fast-acting, convenient and, relative to most comparators, cost-effective therapy for the first-line treatment of AK.

PSS25

COST EFFECTIVENESS OF ANTI-OXIDANT VITAMIN + ZINC TREATMENT TO PREVENT THE PROGRESSION OF INTERMEDIATE AGE RELATED MACULAR DEGENERATION TO ITS WET FORM. A SINGAPORE PERSPECTIVE

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OBJECTIVES: To determine if providing high dose anti-oxidant vitamins + Zinc treatment to intermediate Age Related Macular Degeneration (AMD) patients aged 40-79 years from Singapore is cost effective in preventing progression to Wet AMD. **METHODS:** We estimated the number of AMD patients aged 40 to 79 years (Category 3 and 4) in the Singaporean resident population. This hypothetical cohort was followed for 5 calendar years to determine the number of patients who would progress to wet AMD given the following four treatment scenarios: a) Vitamins +Zn followed by Ranibizumab (as needed) for wet AMD; b) Placebo followed by Ranibizumab (as needed) for wet AMD; c) Vitamins + Zn followed by Bevacizumab (monthly) for wet AMD; and d) Placebo followed by Bevacizumab (monthly) for wet AMD. Costs were estimated for the above scenarios from the providers' perspective and cost effectiveness was measured by cost per disability adjusted life year (DALY) averted with a disability weight of 0.22 for wet AMD. Crude annual mortality rate was incorporated into the model. **RESULTS:** Over 5400 patients could be prevented from progressing to Wet AMD cumulatively over five years if preventive anti-oxidant vitamins +Zn treatment were prescribed. Vitamins + Zn followed by ranibizumab (as needed) or bevacizumab (monthly) was cost effective compared to placebo followed by either drug (cost per DALY averted: $1885.8 - well within the threshold suggesting it is cost effective). However, bevacizumab (monthly 1 injection) alone was cost effective. Cost savings as a result of prescribing anti-oxidant vitamins +Zn were $ 46.7M for ranibizumab arm over 5 years. **CONCLUSIONS:** Prophylactic treatment with high dose anti-oxidant vitamins + Zn for intermediate AMD patients, followed by ranibizumab for patients who progressed to wet AMD was found to be cost-effective. These findings have implications for intermediate AMD screening, treatment and health care planning in Singapore.

PSS26

COST-EFFECTIVENESS ANALYSIS OF LINEZOLID AND VANCOMYCIN IN PATIENTS WITH COMPLICATED SKIN AND SOFT-TISSUE INFECTIONS CAUSED BY METHICILIN-RESISTANT STAPHYLOCOCCUS IN PORTUGAL

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OBJECTIVES: Methicillin-resistant Staphylococcus aureus (MRSA) complicated skin and soft-tissue infection (cSSTI) is an infection associated with high health expenditure for the Portuguese National Health Service (NHS). A decision analytic model was adapted to the Portuguese setting to evaluate the cost-effectiveness (CEA) of linezolid *vs.*vancomycin in MRSA cSSTI. **METHODS:** Published Bayesian evidence synthesis results were used to populate efficacy parameters of the model. Resource utilization and MRSA prevalence rates were obtained through an expert panel of Portuguese clinicians and costs from published sources were applied to resource units. Analyses were done from the Portuguese NHS perspective. Both univariate and probabilistic sensitivity analyses were performed to test the robustness of model results. **RESULTS:** Average cost per patient for linezolid and vancomycin treatments were 15,195€ and 17,345€ respectively. Average effectiveness gained with linezolid treatment was 0.002QALYs. Average saving obtained with linezolid treatment was 2150€ per patient. **CONCLUSIONS:** Linezolid is a dominant strategy compared to vancomycin: less costly and more effective. Compared to vancomycin, linezolid is expected to result in lower total costs that offset its higher acquisition cost in cSSTI in Portugal.

PSS27

ECONOMIC EVALUATION OF RANIBUZUMAB FOR THE TREATMENT OF MYOPIC CHOROIDAL NEOVASCULARIZATION IN CANADA

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OBJECTIVES: To assess the cost-effectiveness of ranibizumab compared to verteporfin in photodynamic therapy (vPDT) for the treatment of myopic choroidal neovascularization (mCNV) from the Canadian health care and societal perspectives. **METHODS:** A Markov model was used to follow a cohort of 55-year old patients with mCNV over a lifetime horizon. The model included 8 health states based on best corrected visual acuity (BCVA) and an absorbing death state. Patients were allowed to remain in their current health state, or transition to other health states or death every 3 months. Results from the RADIANCE trial were used to inform the first year transitions for patients receiving ranibizumab, and the first 3 months for those on vPDT. The VIP trial was used to estimate month 4-12 transitions for vPDT. Patients transitioned according to natural progression from year 2 onwards. Health state utilities were derived from a Canadian utility study and published sources. Resource use and costs were collected from clinical trials, published literature, expert opinion, and standard Canadian sources. **RESULTS:** From the health care perspective, patients receiving ranibizumab for mCNV incurred less health care costs compared to those on vPDT (cost savings of $3,939). This was achieved while accruing an additional 0.07 life years (LYs) and 0.37 quality-adjusted life years (QALYs). Thus ranibizumab dominated vPDT. Similar findings were observed from the societal perspective (cost saving of $14,217). The average BCVA score remained consistently higher with ranibizumab compared to vPDT over the entire time horizon. **CONCLUSIONS:** From a cost-effectiveness standpoint, ranibizumab dominated vPDT in the treatment of mCNV, from both Canadian health care and societal perspectives. Patients on ranibizumab realized more QALYs and LYs at a lower cost compared to vPDT.

PSS28

COST-EFFECTIVENESS OF INTRAVITREAL AFLIBERCEPT IN TREATING NEOVASCULAR AGE-RELATED MACULAR DEGENERATION IN SWEDEN

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OBJECTIVES: Monthly dosing with ranibizumab (RBZ) is needed to achieve maximal sustained visual gains in patients with neovascular ("wet") age-related macular degeneration (wAMD). In Sweden dosing is on an as-needed (PRN) basis, resulting in suboptimal efficacy. Intravitreal aflibercept dosed every 2 months (IVT-AFL) demonstrated clinically equivalent efficacy compared to RBZ monthly dosing (RBZ Q4) in a randomized clinical trial setting. We assessed the cost-effectiveness of IVT-AFL vs. RBZ Q4 and RBZ PRN real-life data, in a Swedish setting. **METHODS:** A Markov model compared wAMD treatment over two years with either IVT-AFL, RBZ Q4 or real-life RBZ PRN. Health states were based on visual acuity in the better-seeing eye; a proportion discontinued treatment monthly or upon visual acuity <20/400. Parameters were estimated from trial data, published literature, or expert opinion. Analyses were performed from a societal perspective with a lifetime horizon (starting age 77 years). The model calculated costs (drug, administration, monitoring, vision impairment, adverse events, caregiver), quality-adjusted life-years (QALYs), and incremental cost-effectiveness ratios (ICERs), all discounted 3% annually. Deterministic and probabilistic sensitivity analyses were performed. **RESULTS:** IVT-AFL cost 578,400 SEK, compared with 686,600 SEK for RBZ Q4 and 565,700 SEK for real-life RBZ PRN; QALYs totaled 4.58 for IVT-AFL, 4.59 for RBZ Q4, and 4.43 for real-life RBZ PRN. Compared with real-life RBZ PRN, IVT-AFL cost 80,000 SEK/QALY gained. RBZ Q4 cost over 20 million SEK/QALY gained, compared with IVT-AFL Q8. The model was most sensitive to IVT-AFL efficacy and patient age. IVT-AFL had a 42% probability of dominating RBZ Q4 and a 100% probability of being cost-effective vs. RBZ PRN, at an assumed willingness-to-pay threshold of 500,000 SEK. **CONCLUSIONS:** Results suggest that, in Sweden, attainment of maximal visual gains via IVT-AFL is cost-effective compared with real-life RBZ PRN dosing. RBZ Q4 is not cost-effective relative to IVT-AFL.

PSS29

THE COST-EFFECTIVENESS OF BIMATOPROST 0.03%/TIMOLOL 0.05% PRESERVATIVE-FREE FIXED COMBINATION COMPARED WITH DORZOLAMIDE/TIMOLOL PRESERVATIVE-FREE FIXED COMBINATION AND 2-BOTTLE UNFIXED COMBINATIONS FOR THE TREATMENT OF PRIMARY OPEN-ANGLE GLAUCOMA IN THE UNITED KINGDOM

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OBJECTIVES: To evaluate the cost-effectiveness of bimatoprost 0.03%/timolol 0.05% (BTFC) preservative-free (PF) fixed combination compared with dorzolamide/timolol

PF fixed combination (DTFC PF), and tafluprost PF/timolol PF unfixed-combination (TTUF PF) for the treatment of primary open-angle glaucoma (POAG). **METHODS:** A cost-effectiveness and cost-utility model was developed to estimate lifetime costs and outcomes. The analysis was performed from a UK NHS perspective. No head-to-head evidence was available for BTFC PF and the comparators; therefore effectiveness estimates in terms of the mean lowering of intraocular pressure (IOP) at Week 12 were estimated using a mixed treatment comparison (MTC). Estimates of visual field progression were taken from the literature and modelled by an irreversible decrease in patients' mean deviation (MD) score in each 12-week cycle. Resource use levels for each of the health states were obtained using a clinician survey. All costs and utilities were obtained from literature or NHS cost sources. Outcomes were reported in terms of cost per mmHg IOP gained and cost per quality-adjusted-life-year (QALY). Deterministic and probabilistic sensitivity analyses were performed. **RESULTS:** The cost-effectiveness results indicated that BTFC PF dominates DTFC PF and TTUF PF, with patients treated with BTFC PF having a greater IOP reduction (1.6 mmHg) and incurring lower lifetime costs (£2,294 vs. DTFC PF, £2,919 vs. TTUF PF). The cost-utility results indicate BTFC PF dominates DTFC PF and TTUF as well with an incremental gain of 0.03 QALYs. Deterministic sensitivity analyses indicate the results are most sensitive to the rate of visual field progression. Probabilistic sensitivity analysis indicates that BTFC PF has a 98.8% probability of being cost-effective at a threshold of £20,000/QALY. **CONCLUSIONS:** BTFC PF is considered a cost-effective treatment option for the treatment of POAG when compared with DTFC PF and TTUF PF from a UK NHS perspective.

PSS30

COST-MINIMIZATION ANALYSIS OF INTRAVITREAL AFLIBERCEPT (IVT-AFL) FOR NEOVASCULAR AGE-RELATED MACULAR DEGENERATION IN SPAIN

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OBJECTIVES: Anti-VEGF therapy improves visual acuity in patients with neovascular ("wet") age-related macular degeneration (wAMD). By comparing different treatment regimen scenarios, based on data from available randomized clinical studies, the objective was to compare costs for intravitreal aflibercept (IVT-AFL) treatment with Ranibizumab treatment when treating wAMD patients in a Spanish setting. **METHODS:** A Markov model, describing wAMD treatment was estimated, calculating the direct medical costs based on 2-year clinical trial data. Parameters were estimated from trial data, published literature, and expert opinion. Costs, discounted at 3% per year, were calculated over a five-year horizon. Alternative scenarios and deterministic sensitivity analyses were performed and reported. **RESULTS:** IVT-AFL, dosed every two months in Year 1 and modified quarterly dosing in year two, was least expensive, €13,519, followed by IVT-AFL every second month, for two years, €16,085. Cost of Ranibizumab monthly (RBZ Q4) regimens ranged from €17,284 (12.6 injections over two years) to €26,457 (monthly injections over two years). Results were driven by less frequent IVT-AFL dosing and monitoring. The model was most sensitive to RBZ Q4 Year 1 efficacy and Year 2 injection frequency. **CONCLUSIONS:** IVT-AFL is less expensive than Ranibizumab when treating wAMD in Spain, due to less frequent dosing with IVT-AFL and lower monitoring costs.

PSS31

COST-MINIMIZATION ANALYSIS OF MULTIFOCAL AND MONOFOCAL INTRAOCULAR LENSES IN CATARACT SURGERY IN THE CZECH REPUBLIC

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OBJECTIVES: To model the lifetime cost attributed to intraocular lenses (multifocal vs. monofocal) implantation during cataract surgery from patient's perspective. **METHODS:** The Markov model was developed with 28-day cycle length projecting life-time costs of patients undergoing cataract surgery of both eyes at 65 years. Patients move among four health states which occur after cataract surgery. Patients become independent on the spectacles or need them after cataract surgery with probabilities derived from literature. In the model, we assume that new glasses are bought by patients, who wear glasses after surgery, every three years. Patient may die from each health state with probability derived from Czech life-tables there was no difference in mortality specific for particular intraocular lenses. Resource utilization was received by an expert panel and unit costs were derived from current pricing list. Costs of cataract surgery with multifocal and monofocal lenses implantation were 1,200EUR and 9.9EUR, respectively. Mean costs of spectacles were 48.9EUR and 82.5EUR after the intervention of implanting multifocal and monofocal lenses, respectively and monthly costs of ophthalmologist visit, maintenance and service of spectacles was 0.4EUR. Discount rate of 3% was applied. One-Way Sensitivity Analysis was performed. **RESULTS:** After cataract surgery with multifocal lenses implantation, patients purchase on average by 4.4 spectacles less compare to patients undergoing monofocal intraocular lenses implantation (i.e. 5.9). The initial patient's investment of 1,190EUR into multifocal IOLs is in the lifetime horizon partially offset by saving of 364EUR attributed to lower number of new spectacles purchased and their maintenance. Costs on spectacles after cataract surgery with monofocal lenses and level of reimbursement of multifocal lenses were the biggest driver of the results. **CONCLUSIONS:** Bilateral multifocal IOL implants decrease patient's dependence on spectacles. From patient's perspective, the initial investment into multifocal lenses is partially compensated by saving of spectacles costs and its maintenance.

PSS32

A QUEBEC ECONOMIC EVALUATION FOR 36 MONTHS OF RANIBIZUMAB FOR THE TREATMENT OF DIABETIC MACULAR EDEMA

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OBJECTIVES: The value of ranibizumab monotherapy and laser combination therapy compared to laser photocoagulation was assessed within the framework of a cost-utility analysis from the Quebec health care and societal perspectives. **METHODS:** A Markov model followed a cohort of patients with diabetic macular edema over a lifetime time horizon. The model included 8 heath states as defined by best-corrected visual acuity and one absorbing state for death. All transition probabilities in Year 1 were based on the RESTORE trial. For Years 2 and 3 data from the RESTORE Extension trial was used to inform ranibizumab monotherapy and combination therapy transition probabilities. For laser photocoagulation, Years 2 and 3 transition probabilities were based on data from DRCR.net trials. From Year 4 onwards, all transition probabilities were based on the natural history of disease. Health state utilities were derived from the literature (for the best-seeing eye) and a Canadian utility study in RVO patients (for the worse-seeing eye). Resource use and costs were collected from published literature and standard Quebec sources. Costs and outcomes were discounted at 5% as recommended by Canadian guidelines. **RESULTS:** From the health care perspective, patients receiving ranibizumab monotherapy accrued an additional 0.40 quality-adjusted life years (QALYs) and an incremental cost of CAD$9,790, resulting in $24,345 per QALY gained. Patients receiving combination therapy accrued an additional 0.32 QALYS and an incremental cost of $11,387, resulting in $36,148 per QALY gained. At a willingness-to-pay threshold of $50,000, ranibizumab monotherapy and combination therapy had a 75.2% and 59.3% probability of being cost-effective (CE), respectively. From the societal perspective, considering costs from productivity losses, ranibizumab monotherapy and combination therapy dominated laser photocoagulation and had an 88.2% and 78.8% probability of being CE, respectively. **CONCLUSIONS:** Compared to laser photocoagulation, ranibizumab monotherapy and combination therapy for 3 years show cost-effectiveness from health care and societal perspectives.

PSS33

A COST-UTILITY ANALYSIS OF RANIBIZUMAB IN AGE-RELATED MACULAR DEGENERATION BASED ON REAL-LIFE OBSERVATIONAL DATA IN FRANCE

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OBJECTIVES: To calculate the cost-effectiveness of ranibizumab versus licensed comparators in wet age-related macular degeneration (AMD) from a French societal perspective based on real-life observational data. **METHODS:** A Markov model was developed containing 5 health states defined by visual acuity (VA) of the treated eye and a death state. The model time horizon covered 2 years of treatment followed by 8 years of best supportive care (BSC). Medical and non-medical resource use and efficacy during treatment were based on observational patient-level data with ranibizumab (LUEUR and LUMIERE studies) or verteporfin (OPV study). No observational data were available for pegaptanib. Efficacy was obtained per VA level to control for population differences in baseline VA. The base-case analysis reflects 1st line therapy. Mutual to both comparators, BSC was modelled with clinical trial placebo data and resource use estimates. Annual discount rates were 4% for costs (€ 2011) and outcomes. Utilities reflected general population preference (UK) using time-trade-off methods. **RESULTS:** Compared to verteporfin, 1st line ranibizumab provided a gain of 0.20 QALYs and avoided 0.63 years of vision impairment (Y_{VI}). The total incremental cost was €3,843. The cost-utility was €19,088/QALY, the cost per Y_{VI} avoided was €6,114. Similar outcomes were obtained when including pre-treated patients. Ranibizumab was cost-effective with a probability of 62.8% and 78.2% at willingness to pay thresholds of €20,000/QALY and €30,000/QALY respectively. **CONCLUSIONS:** Based on real-life observational studies, 2-year treatment with ranibizumab was associated with improved vision-related health outcomes and a cost-utility ratio below commonly applied willingness to pay thresholds.

PSS34

COST-EFFECTIVENESS OF SEQUENCES OF BIOLOGIC TREATMENTS FOR MODERATE-TO-SEVERE PSORIASIS IN FINLAND

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BACKGROUND: Little is known about the health-economic properties of sequences of biologics agents for the treatment of moderate-to-severe psoriasis. These are available to patients who have failed to achieve therapeutic goals on the traditional systemics such as methotrexate and ciclosporin. **OBJECTIVES:** To predict the five-year costs and health outcomes associated with different sequences of biologic psoriasis treatments (adalimumab, etanercept, infliximab, and ustekinumab), and to evaluate their cost-effectiveness from a Finnish societal perspective. **METHODS:** The Psoriasis Area Severity Index (PASI) was chosen as the main efficacy measure and results of a published meta-analysis were re-run to provide relative efficacy of the biologics in the short term. A fully stochastic Markov cohort model was developed that represents patient health in terms of PASI, Dermatology Life Quality Index (DLQI), and quality-adjusted life-years (QALY). Failure to achieve efficacy targets, serious adverse events and other reasons of withdrawal led to switch to the next treatment in the sequence, and eventually methotrexate maintenance. Costs included direct medical and related direct costs as well as productivity losses. Costs and QALYs were discounted at 3% per annum. **RESULTS:** At a willingness-to-pay threshold of EUR 50,000 per QALY gained, only four of the 60 potential sequences had non-zero probability of being cost-effective. The sequence most likely to be cost-effective was first-line ustekinumab followed by adalimumab followed by maintenance. Its incremental cost-effectiveness ratio (ICER) per QALY gained relative to the cheapest sequence (etanercept followed by adalimumab) was estimated at EUR 8,253. Some modelling assumptions tested in the sensitivity analyses may be influential in driving the results, but others, for example inclusion of an anti-TNF class effect, made