were USD 856 (VND 19,984,545), rounded to nearest integer, and USD 1115 (VND 26,046,045), respectively. For every 10 procedures performed on centrifugal technique, payer is expected to save USD 2595 (VND 60,615,000). ***Conclusions:*** The economic evaluation between these two plasma exchange techniques showed centrifugal TPE had a better cost benefit than membrane TPE. For a hospital with similar characteristics, we expect positive economic impact with application of centrifugal TPE.

PMD6
COMPARING THE LONG-TERM COSTS ASSOCIATED WITH INTRAOCULAR LENS SELECTION AND ND:YAG LASER CAPSULOTOMY POST-CATARACT SURGERY: A COST-CONSEQUENCE ANALYSIS FROM A DUTCH HEALTHCARE SYSTEM PERSPECTIVE

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Objectives: Cataract surgery is the most frequently performed surgical procedure in The Netherlands. Posterior capsule opacification (PCO) is the most common complication of cataract surgery and requires a secondary treatment: Nd:YAG capsulotomy. This procedure is usually safe, however, could lead to complications such as retinal detachment (RD), glaucoma, and cystoid macular edema (CME). The aim of this analysis was to estimate the cost impact of Nd:YAG procedures due to AcrySof vs. other single-piece acrylic IOLs, reflecting the Dutch setting. ***Methods:*** A cost-consequence model was developed comparing healthcare resource utilization and costs of different single-piece acrylic IOLs. The incidence of Nd:YAG at three years post-cataract surgery with five single-piece acrylic IOLs was attained from the literature (2.4% for AcrySof, 5.1% for Tecnis, 9.2% for Akreos, 12.3% for Lenstec and 12.6% for Rayner). Cumulative incidence of post-YAG laser complications at 3 years was estimated using published literature: RD (4.4%), glaucoma (8.8%), and CME (16.9%). Costs were based on published Dutch DRGs (Nd:YAG: €235, Vitrectomy: €2,470 glaucoma: €310, CME: €150). Number of annual cataract procedures in the Netherlands was sourced from publicly available statistics. One associated follow-up visit was assumed per Nd:YAG procedure (€80). ***Results:*** For 158,415 cataract procedures carried out in one year, single-piece AcrySof IOLs were found to be associated with significantly lower number of Nd:YAG procedures 3 years post-cataract surgery when compared to Tecnis (cases) (-4,277), B&L Akreos (-10,772), Lenstec (-15,683) and Rayner (-16,158) with subsequent reductions in RD, glaucoma and CME cases. Potential cost savings for the Dutch healthcare system with the use of AcrySof over other IOLs ranged from €1,813,611 (vs. Tecnis) to €6,851,420 (vs. Rayner). ***Conclusions:*** Results highlight that the appropriate choice of IOL for cataract surgery, as a direct consequence of lower ND:YAG capsulotomy rates and associated complications – may translate into significant savings for the Dutch national healthcare system

PMD7
COMPARING THE LONG-TERM COSTS ASSOCIATED WITH INTRAOCULAR LENS SELECTION AND ND:YAG LASER CAPSULOTOMY POST-CATARACT SURGERY: A COST-CONSEQUENCE ANALYSIS FROM A BELGIAN HEALTHCARE SYSTEM PERSPECTIVE

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Objectives: Cataract surgery is the most frequently performed surgical procedure in Belgium. Posterior capsule opacification (PCO) is the most common complication of cataract surgery and requires a secondary treatment: Nd:YAG capsulotomy. This procedure is usually safe, however, could lead to complications such as retinal detachment (RD), glaucoma, and cystoid macular edema (CME). The aim of this analysis was to estimate the cost impact of Nd:YAG procedures due to AcrySof vs. other single-piece acrylic IOLs, reflecting the Belgian setting. ***Methods:*** A cost-consequence model was developed comparing healthcare resource utilization and costs of different single-piece acrylic IOLs. The incidence of Nd:YAG at three years post-cataract surgery with five single-piece acrylic IOLs was attained from the literature (2.4% for AcrySof, 5.1% for Tecnis, 9.2% for Akreos, 12.3% for Lenstec and 12.6% for Rayner). Cumulative incidence of post-YAG laser complications at 3 years was estimated using published literature: RD (4.4%), glaucoma (8.8%), and CME (16.9%). Costs were based on published Belgian nomenclature (Nd:YAG: €188.15, Vitrectomy: €762.63 glaucoma: €381.31, CME: €85.99). Number of cataract procedures per year in Belgium was sourced from Eurostat statistics. One associated follow-up visit was assumed per Nd:YAG procedure (€7.48). ***Results:*** For 133,789 cataract procedures carried out in one year, single-piece hydrophobic AcrySof IOLs were found to be associated with significantly lower number of Nd:YAG procedures (cases) 3 years post-cataract surgery when compared to Tecnis (-3,612), B&L Akreos (-9,098), Lenstec (-13,245) and Rayner (-13,646) with subsequent reductions in RD, glaucoma and CME cases. Potential cost savings for the Belgian healthcare system with the use of AcrySof over other IOLs ranged from €948,894 (vs. Tecnis) to €3,584,712 (vs. Rayner). ***Conclusions:*** Results highlight that the appropriate choice of IOL for cataract surgery, as a direct consequence of lower ND:YAG capsulotomy rates and associated complications – may translate into significant savings for the Belgian national healthcare system.

PMD8
ESTIMATING THE POTENTIAL CASES OF BLINDNESS AND COSTS AVOIDED AND IN REALLOCATING HEALTHCARE RESOURCE UTILIZATION FROM TREATING POSTERIOR CAPSULAR OPACIFICATION TO NEOVASCULAR AGE-RELATED MACULAR DEGENERATION

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Objectives: It has been reported that inadequate clinic capacity in the hospital eye service (HES) in the UK NHS has "threatened optimal care and access to potentially sight-saving treatment for patients with nAMD". The Nd:YAG capsulotomy procedure places a resource burden on the HES. The condition it treats, Posterior capsule opacification (PCO) (most common post-cataract surgery complication) is heavily influenced by intraocular lens (IOL) choice for cataract surgery. The objective was to estimate potential cases of legal blindness (Visual acuity (VA) of 20/200 Snellen) and costs avoided if out-patient appointments were used administrating Anti-VEGF injections to nAMD patients rather than performing unwanted Nd:YAG procedures for PCO. ***Methods:*** The expected number of avoided Nd:YAG procedures was calculated applying published 3-year incidence rates (AcrySof: 2.4% v average rate: 6.4%) to annual cataract procedures estimates. Assuming 15.9 injections over 3-years per person, we simulated worsening to/improving from VA of 20/200 in the same number of patients without and with this treatment using a simple two-state 3-year Markov model. We applied published rates of worsening to/improving from VA of 20/200, annual cost of blindness of £6,957 per the NICE Macular degeneration guideline, and 3.5% discount rate. ***Results:*** Total number of Nd:YAG procedures avoided assuming rates associated with AcrySof IOLs (compared to the average rate) over 3-years were estimated at 19,237. Over the same period, assuming these outpatient appointments were allocated to administer Anti-VEGF injections to nAMD patients, our model estimates 844 cases of legal blindness could be avoided – resulting in averting potential costs associated with blindness of £9.5 million over 3-years. ***Conclusions:*** The evidence suggests that choosing AcrySof IOLs for cataract surgery reduces the requirement for Nd:YAG capsulotomy procedures. These resources could be reallocated in the HES in the NHS – offering a potential opportunity to alleviate the rapidly growing demand on services for treating nAMD.

PMD9
INTRODUCING BUDGET IMPACT ANALYSIS COMPARING REUSABLE TO SINGLE-USE BRONCHOSCOPES WITHIN A LARGE UK UNIVERSITY HOSPITAL

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Objectives: Investing in disruptive medical devices are often associated with significant economic uncertainties. Budget impact analyses (BIA) are suitable to inform decision-makers when published health economic evidence is limited and/or unrepresentative for the specific setting introducing the new technology. This is the first example of a budget impact analysis comparing conventional reusable bronchoscopes to single-use bronchoscopes. ***Methods:*** A BIA was conducted to estimate the incremental cost of a current setup with reusable bronchoscopes vs Ambu aScope4 Broncho. Efficacy of the two technologies were assumed equal, based on published literature. The most central data in the model was sampled from Kings Collage Hospital. This included procedures p.a., number of reusable bronchoscopes (RB), cost of RB, repair costs p.a., number of rack systems, cost of replacement lamps and light guide cables, and number of aView monitors in a new aScope4 Broncho setup. Missing datapoints were based on assumptions from other UK hospitals. A 3.5% discount rate and 5-8 years annuitizing periods were used. Capital costs were not projected, and overhead costs were not added. Robustness of the base-case results were tested via two-way sensitivity analysis. Furthermore, isopleths were identified based on varying procedures p.a. and infection rates. ***Results:*** At 500 procedures p.a. the aScope4 Broncho is cost-minimising of £115 per procedure on direct cost of use and £358 when including cost associated with a 1.6% risk of cross-infection. Cost-isopleths were identified at 903 procedures and 3,175 procedures at 0 and 0.6% infection-risk, respectively. ***Conclusions:*** The BIA finds that aScope4 Broncho is cost minimizing in the modelled scenario. The base-case result is sensitive to the volume of procedures p.a., infection rate, and capital costs. Furthermore, ascribing a repair cost correlated to the procedure volume increased the RB dominance at a low procedure volume, and increased aScope4 Broncho dominance at a high procedure volume.

PMD10
INSIGHTS INTO THE IMPACT OF POINT-OF-CARE TESTING: A SYSTEMATIC REVIEW OF HEALTH-ECONOMIC EVALUATIONS

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Objectives: Point-of-care (POC) testing is undeniably an essential technology in future patient care. Its implementation, however, still has to be guided and

supported. Health economic analyses can support the efficient allocation of resources based on the balance between health benefits, risks, and costs. This paper aims to investigate the observed or expected health and economic impact of introducing POC testing. ***Methods:*** The Scopus database was searched to identify publications describing a health-economic evaluation of a POC test. Data were extracted from the included publications, including general characteristics, methodological characteristics and the cost and effectiveness outcomes of the evaluation. ***Results:*** were sorted in 6 groups according to their purpose (diagnosis, screening or monitoring) and care setting (primary care or secondary care). The reporting quality of the publications was determined using the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) checklist. ***Results:*** The initial search resulted in 265 publications, of which 33 met the inclusion criteria. Most of the evaluations were performed in a primary care setting (n = 23; 69.7%) compared to a secondary care setting (n = 10; 30.3%). More than half of the evaluations were on POC tests implemented with a diagnostic purpose (n = 19; 57.6%). The majority of studies concluded that POC testing is recommended for implementation, although in some cases only under certain circumstances and conditions. In most cases, POC testing resulted in improved effectiveness, but higher costs. Compliance with the CHEERS checklist items ranged from 20.8% to 100% with an average quality of 74.3%. ***Conclusions:*** POC testing can be a valuable alternative to traditional laboratory testing or usual care, but should not be expected to be cost-saving. The cost-effectiveness of POC testing, in general, will likely vary according to the disease, and the cost-effectiveness of specific POC tests can vary according to the population and setting.

PMD11
MEASURING THE ECONOMIC IMPACT OF THERAPEUTIC PLASMA EXCHANGE: A SINGLE INSTITUTION STUDY IN XIAMEN, CHINA

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Objectives: Therapeutic plasma exchange (TPE) is a procedure that removes pathogenic substances of high molecular weight such as antibodies, endotoxins, circulating immune complexes and cholesterol-containing lipoproteins from plasma. During TPE procedure, patient blood is drawn into the medical device that separate and remove plasma from cellular component. The removed plasma goes into the waste bag and replaced with plasma substitute fluid, which are then returned to the patient. According to 2016 guidelines of the American Society of Apheresis (ASFA), TPE is recommended first line treatment in various disease category; neurology, transplantation, intensive care settings, renal and hematology. Plasma exchange can be performed using centrifugal or membrane filtration method. This study assessed the cost associated with these techniques from payer perspective. ***Methods:*** TPE utilization and cost data were collected from nephrology and hematology department, The First Affiliated Hospital, Xiamen, China. A cost benefit analysis model was created on Excel spreadsheet using micro-costing approach with the following cost component; device acquisition, maintenance, consumables, venous access, replacement fluids, labor. Data on procedure efficiency and clotting frequency were sought from published literatures. Clotting was defined as requiring filter replacement to continue procedure. The model assumed similar clinical outcome in these techniques. ***Results:*** A total of 92 TPE procedures were performed annually with over half of the patients (67.3%) used centrifugation method. The estimated cost per procedure for centrifugal and membrane TPE were USD 557 (CNY 3,854), rounded to nearest integer, and USD 1321 (CNY 9138), respectively. Payer is expected to save USD 764 (CNY 5284) for every TPE performed using centrifugal compare to membrane method. ***Conclusions:*** The economic evaluation between these two plasma exchange methods showed centrifugal TPE had a better cost benefit than membrane TPE.

PMD12
UNDERSTANDING THE ECONOMIC IMPACT OF THERAPEUTIC PLASMA EXCHANGE: A SINGLE INSTITUTION STUDY IN PUNE, INDIA

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Objectives: Therapeutic plasma exchange (TPE) is a procedure that removes large volume of plasma from a patient. Through the bulk removal and replacement of plasma, pathogenic substances that cause underlying disease such as antibodies, endotoxins, circulating immune complexes and cholesterol-containing lipoproteins were removed. It is a common treatment modality in management of various renal, hematological and neurological diseases. Plasma exchange can be performed using centrifugal (c) or membrane (m) filtration method. This study assessed the cost associated with these techniques from public payer perspective. ***Methods:*** TPE utilization and cost data were collected from nephrology department, Deenanath Mangeshkar Hospital, Pune, India. A cost benefit analysis model was created on Excel spreadsheet using micro-costing approach with the following cost component; device acquisition, maintenance, consumables, venous access, replacement fluids, labor. Data on procedure efficiency and clotting frequency were sought from published literatures. Clotting was defined as requiring filter replacement to continue procedure. The model assumed similar clinical outcome in these techniques. Sensitivity analysis was conducted with increase number of TPE procedures on centrifugal technique. ***Results:*** A total of 166 TPE procedures were performed annually; membrane (90%) and centrifugal (10%). In the sensitivity analysis, converting 90% mTPE to cTPE, cost per procedure for centrifugal and mTPE was estimated at USD 261 (INR 18,117), rounded to nearest integer, and USD 371 (INR 25,763), respectively. Plasma exchange with membrane technique cost the payer additional USD 110 (INR 7,646) for each TPE procedure. Additional savings of USD 29 (INR 2000) was expected for each cTPE procedure with peripheral access. The projected annual cost savings with predominant use of centrifugal technique was USD 33,210 (INR 2,305,392). ***Conclusions:*** The economic evaluation between these two plasma exchange methods showed centrifugal TPE had a better cost benefit than membrane TPE.

PMD13
COST-UTILITY ANALYSIS OF ISTENT INJECT IN MILD TO MODERATE PRIMARY OPEN-ANGLE GLAUCOMA IN JAPAN

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Objectives: To evaluate the cost-effectiveness of iStent *inject*® plus cataract surgery versus cataract surgery alone in patients with mild to moderate primary open-angle glaucoma (POAG) in Japan. ***Methods:*** A lifetime Markov model was developed to compare the treatment pathway of POAG patients receiving iStent *inject*® plus cataract surgery or cataract surgery alone. Patients entered the model with mild to moderate POAG and received cataract surgery with or without iStent *inject*® with adjunct anti-glaucoma medications, if necessary, to reduce intraocular pressure, thus slowing the severity progression. Depending on efficacy of treatments based on randomized clinical trial results, patients transitioned from current to next severity defined by visual field defect. Outcomes were measured as quality-adjusted life year (QALY) gained and incremental cost-effectiveness ratio (ICER) per QALY gained. Cost-effectiveness was assessed using the willingness-to-pay (WTP) threshold of JPY5,000,000/QALY. The base case analysis was conducted from the perspective of the Japanese public payer. Scenario analysis was conducted from the societal perspective by incorporating productivity loss of working family caregivers and caregiver burden for the severe POAG patients. ***Results:*** In the base case, compared to cataract surgery alone, iStent *inject*® plus cataract surgery was found to be cost-effective with an ICER of JPY3,039,969/QALY gained. At the WTP threshold, there was a 72% probability of iStent *inject*® plus cataract surgery being cost-effective compared to cataract surgery alone. In the scenario analysis, iStent *inject* plus cataract surgery was found to be dominant strategy over cataract surgery alone. ***Conclusions:*** These cost-effectiveness analyses suggest that iStent *inject*® combined with cataract surgery is cost-effective or a dominant strategy compared to cataract surgery alone in patients with mild to moderate POAG.

PMD14
COST-EFFECTIVENESS ANALYSIS OF THE USE OF MICROINVASIVE SURGERY WITH ISTENT® IN COMBINATION WITH PHACOEMUSIFICATION FOR GLAUCOMA AND CATARACT PATIENTS IN THE MEXICAN PUBLIC HEALTH SYSTEM.

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Objectives: Glaucoma is a progressive, irreversble eye disease that, if left untreated, can eventually cause blindness especially in those patients with cataracts. iStent® has been shown to be effective in reducing intraocular pressure, with an excellent safety profile for this group of patients. The objective is to perform a cost-effectiveness analysis in terms of incremental costs for years of blindness-free life to evaluate minimally invasive surgery using iStent® in combination with phacoemulsification compared to all alternatives currently employed in the Mexican public sector. ***Methods:*** A systematic review of the literature was developed for each of the comparators. Statistically significant differences were found between the use of phacoemulsification in combination with iStent®. A cost-effectiveness model was developed to capture the main benefits of iStent® use in clinical and economic terms. Specifically, a decision tree was developed where each branch symbolizes a treatment alternative. There are two post-operative health conditions: success or failure of surgery, defined by the number of patients who were able to reduce their intraocular pressure below 21mmHg. Subsequently, if the patients did not succeed, the disease will evolve into possible blindness. All costs were estimated by national public sources, and if necessary were updated to present value. ***Results:*** In a 5-year time horizon, treatment with iStent® and phacoemulsification turns out to be the dominant option; in other words, it is an alternative capable of generating savings of 1,230 MXN per patient and 0.049 years of life free of incremental blindness. ***Conclusions:*** The iStent® technology should be the first choice for the treatment of glaucoma and cataract patients in Mexico, due to its ability to generate savings for public health institutions and medical benefits for patients.

PMD15
COST EFFECTIVENESS ANALYSIS OF STANDARD AND PREMIUM INTRAOCULAR LENSES IMPLEMENTED IN THE TREATMENT OF CATARACT UNDER DIFFERENT INSURANCE SCHEMES IN EGYPT

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