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negative outcome of IVF (RR = 1.41; 95% CI 1.2 - 1.67; p = 0.001) (Balanda N.A. et al., 2019). Two studies did not evaluate the relationship between the TD test parameter and the hematopoietic system with at least one final outcome. Conclusions: The results of this systematic review can be used to estimate the cost-effectiveness of TD for predicting VTEC in the postoperative period or the success of IVF.

PMD20  
**EVALUATION REVIEW ON WHOLE BLOOD AUTOMATION USING AUTOMATED BLOOD PROCESSING SYSTEM (ABPS)***

Comasolivias N,1 Costansa A,1 Dierick K2, Ferrario LB3, Busutil R1, Moccaldi L3, Cavagnaro P3, Garra L3, Valeri A3, Cirone M3, Rapetti R3

1Terumo BCT Europe NV, Zaventem, VBR, Belgium, 2Terumo BCT Europe NV, Zaventem, Belgium, 3Alcon Laboratories Ireland Ltd, Cork, CO, Ireland.

Objectives: The aim of this study is to review and summarize existing literature related to this processing technology to understand the available data. The Automated Blood Processing System (ABPS) can process up to four Whole Blood (WB) units simultaneously into a red blood cell unit, an interim platelet unit, and a plasma unit. It provides an alternative solution to the semi-automatic or manual WB processing methods. Methods: We have performed a Literature Review through the PubMed Database, the ISPOR Publication Database, the International Society of Blood Transfusion Database, the Transfusion Database and using the Embase® search engine. The first search yielded a total of 78 scientific publications. After the abstract screening and the criteria assessment, 49 were excluded from the final review.

Results: From the 29 scientific publications gathered in the literature review, 14 (48%) reported that the ABPS is compliant with diverse international standards of Blood quality and safety; 9 (31%) reported that the implementation of ABPS increases the efficiency of WB processing, blood bank operations and productivity; 3 (10.5%) reported that ABPS red blood cell concentrates (RBCs) have higher Hemoglobin content and improved semi-automatic or manual WB Processing methods using Top-to-Bottom; and (1 of these, ABPS RBCs have higher Hemoglobin content than Top-to-Top methods; 2 (7%) analyzed the different processing protocols of ABPS linked with quality standards; 1 (3.5%) reported that quality granulocyte concentrates can be obtained with the ABPS. Conclusions: ABPS provides the flexibility to comply with quality standards from international guidelines and regulatory entities. ABPS has the capability to increase blood bank operations, procedure efficiency and productivity, and reduce the operational processing time. Higher hemoglobin content can be obtained using ABPS compared to Top-to-Bottom methods. However, due to the limited evidence on this technical hematological aspect, we encourage healthcare and blood bank centers to perform additional research to quantify it.

PMD31

**EFFICACY, SAFETY AND EFFICIENCY INDICATORS IN THE PERIPHERAL VENOUS ACCESS MANAGEMENT**

Schettini F1, Ferrario LB2, Foglia E2, Garagola E2, Porazzi E2, Parodi L2, Cavagnaro P2, Garra L2, Valeri A3, Cirone M3, Rapetti R3

1IUC University, CASTELLANZA MI, Italy, 2IUC University, Castellanza, Italy, 3Alcon Laboratories Ireland Ltd, Cork, CO, Ireland.

Objectives: To analyze the outcome measures related to the Peripheral Venous Catheter (PVCs) management, in the clinical practice, and to define economic resources absorption, with regard to presence or absence of PVCs implant standard procedure, and the hemostatic system with at least one final outcome. Methods: An observational prospective study was conducted within five Medical and Surgical Departments, involving two Liguria Region Hospitals. Consecutive cases were enrolled and placed into two different scenarios: 1) use of three disposable devices (Scenario 1); 2) use of only two or one disposable device (Scenario 2). Clinical and economic data were collected in order to define efficacy, safety, and efficiency indicators. The portion of patients for whom the PVC was removed, because of the end of therapy and the PVC-related adverse event occurrence were retrieved. An activity-based costing approach was also implemented to define the PVCs process costs. Results: 380 patients were enrolled, 18% of whom were placed in Scenario 1. For 86.8% of patients in Scenario 1 (vs 39.40% in Scenario 2, p-value=0.000), the PVC removal was due to the end of the therapy, presenting the best performance, and guaranteeing a lower adverse events occurrence rate. Scenario 1 is economically sustainable. Despite higher cost in the technology used, Scenario 1 is related to a lower overall process cost, given the occurrence of fewer adverse events (€19.60 vs €21.71, p-value=0.0019), thus also presenting an overall lower time (4.39 vs 5.72 minutes, p-value=0.000). Conclusions: Results demonstrated the importance to consider efficacy, safety and organizational measures, instead of only economic aspects. Scenario 1 reported a lower adverse events incidence, and fewer attempts in PV removal, with a consequent costs mini-

PMD32

**ESTIMATING SOCIETAL COSTS ASSOCIATED WITH VISION LOSS AND DELAYED CATARACT SURGERY: THE POTENTIAL IMPACT OF THE COVID-19 PANDEMIC.***

O’Boyle D1, Busutil R2, Moccaldi L3

1Busutil R, 2Moccaldi L, 3Busutil R, 4Alcon Laboratories Ireland Ltd, Cork, CO, Ireland, 2Alcon Healthcare, S.A., Sevilla, Spain, 3Alcon NV, Brussels, Belgium.

Objectives: Cataract surgery is the most commonly performed surgical procedure in the EU (approx. 4 million annually). The suspension of interventions due to the COVID-19 pandemic has had a devastating impact on patients’ access to care. For many countries, complete cessation of elective cataract surgery during the crisis has been an unfortunate reality. Patients on prolonged waiting lists may experience negative outcomes during the wait period, including vision loss, increased risk of falls, and ultimately, poorer health-related quality of life (HRQoL). The objective of this research was to estimate the potential societal costs associated with vision-loss related to expected prolonged waiting times for cataract surgery, as a consequence of COVID-19. Methods: In this analysis, we present estimates relating to 3 cohorts: a hypothetical cohort of 1,000 cataract surgeries; quarterly estimates of cataract surgeries in the UK; quarterly estimates for the EU. Quarterly estimates were chosen to reflect a suspension of cataract surgeries for 3 months, during the COVID-19 crisis. UK and EU cataract surgery numbers were attained from EURISOAT. Estimates for decreasing visual acuity for those waiting for surgery were attained from the literature, as were the cost-estimates associated with cataract-related sight-loss. 5 scenarios (at 20% intervals) were simulated for the cost-estimates, assuming from 20% to 100% clearing of waiting-lists. Results: For cohort 1 (1,000 patients), the societal costs associated with eye surgery for those waiting for surgery ranged between €326,831 (20% of patients remain untreated) to €1.63m (100% remain untreated). For cohorts 2 (UK) & 3 (EU), cost estimates are £39.46m (£973m and £328.30m to £1.53 billion, respectively. Estimates consist of direct (13.35%), indirect (39.9%) and intangible costs (46.7%). Conclusions: Cataract surgery is a sight-saving procedure and its impact on HRQoL is overwhelmingly positive. The reduced access to care for cataract patients due to COVID-19 is likely to be associated with significant societal costs.

PMD34

**RAPID MEDTECH INNOVATION BRIEFINGS FOR COVID-19.***

Owens R1, Yang Y2, Carter K3

1National Institute for Health and Care Excellence, Manchester, LAN, UK, 2National Institute for Health and Care Excellence, Manchester, UK, 3National Institute for Health and Care Excellence, Manchester, UK.

Objective: Medtech innovation briefings (MIBs) are advice products produced by the National Institute for Health and Care Excellence (NICE). During the COVID-19 pandemic, NHS England requested advice on devices that were relevant to COVID-19. NICE adapted the MIB process to produce advice for NHS England more quickly. This study reviews how the MIB process was adapted to produce rapid MIBs for COVID-19 related medical devices. Methods: Retrospective analysis of the time taken to publish rapid MIBs compared to the standard timeline and process for MIB development. Results: Rapid MIBs took 4 to 13 days to complete, standard MIB development takes approximately 78 days. The first rapid MIB draft took 2 to 3 days to write compared with 15 days for standard MIBs. Five experts were recruited to comment on rapid MIB drafts, exceeding the minimum of 3 required for a standard
MIB. Experts and companies have 8 days to review the standard MIB; the experts and companies involved in the rapid MIB had between 1 and 3 days. Two of the three rapid MIBs were reviewed once by the experts and companies, standard MIB process includes two separate review periods. Two of the rapid MIBs did not have evidence searches conducted by NICE’s information services team and were not reviewed by the MHRA as the information was already available to NICE. Conclusions: Two of the devices had previously been reviewed by NICE during the digital guidance pilot, this is likely to have impacted the findings and may limit the generalisability of the comparison with the standard MIB timeline. Key challenges identified included the limited amount of published evidence and short review periods. Despite the limitations, NICE’s development of rapid MIBs demonstrates how NICE can adapt their processes to meet the needs of the NHS.

PMD35
REMOTE PATIENT MONITORING IN ACUTE MEDICAL CONDITIONS; CAN DIGITAL HEALTH SOLUTIONS REDUCE CLINICIAN WORKLOAD AND EASE THE PRESSURE ON HEALTHCARE PROVIDERS DURING THE COVID-19 CRISIS?
Shah S1,2, Gubernov A,3 Knight M,4 Gagnon P5
1Humana Therapeutics, London, UK, 2UCH London Foundation Trust, London, UK, 3West Hertfordshire Hospitals NHS Trust, Watford, Hertfordshire, UK, 4Great Britain
Objectives: Digital remote patient monitoring (RPM) can add value to virtual wards; this has become more apparent in the context of the COVID-19 pandemic. Healthcare providers are overwhelmed resulting in clinical teams spread more thinly. We aim to assess the impact of the introduction of an app-based RPM (Huma Therapeutics) on a clinician’s workload in the context of a COVID-19 specific virtual ward; and its feasibility. A feasibility study was carried out over one month where clinician workload was monitored, and full time equivalents (FTE) savings were calculated. An NHS hospital repurposed a telephone-based respiratory virtual ward for COVID-19. Amber status (NHS definition) COVID-19 patients were monitored for 14 days post-discharge to help identify deteriorating patients earlier. A smartphone-based app was introduced to monitor data points submitted by the patients with telephone calls used for communication. Results: 56 patients were enrolled in the app-based virtual ward. Digital RPM reduced the number of phone calls from a median of 4.5 per patient per monitoring period to 1.15. There was no change in the mean duration of phone calls (8.5 minutes), and no reports of readmissions or mortality. This equates to a mean saving of 47.60 working hours. This translates to 3.30 fewer FTEs (raw phone call data), resulting in 1.1 fewer FTEs required to monitor 100 patients when adjusted for time spent reviewing app data. Individual clinicians were averaging 10.9 minutes per day. Conclusions: Smartphone-based RPM technologies may offer tangible reductions in clinician workload at a time of severe service strain. In this small pilot, we demonstrate the economic and operational impact digital RPM technology can have in improving working efficiency and reducing operational costs. Whilst this particular RPM solution was deployed for the COVID-19 pandemic, it may set a precedent for wider utilisation of digital RPM solutions in other clinical scenarios where increased care delivery efficiency is sought.

PMD36
ENDOVASCULAR ANEURYSM REPAIR IN FRANCE: A HOSPITAL DATABASE STUDY COMPARING THE THREE MOST COMMONLY USED ENDOGRAFTS
de Lestrange L1, Hanoka S2, Millon A, Daydé F, Motola S3
1TUL Gore & Associates, Paris, France, 2University Hospital of Lyon, Lyon, France, 3HEVA, Lyon, France
Objectives: To describe endovascular treatment of AAA in France from national hospital claims database. Methods: All hospital stays associated with AAA endovascular implantation were extracted from the 2014 database. Implant codes were used to group patients according to Endoprosthesis type into three arms: GORE® EXCLUDER® AAA Endoprosthesis (Group A), COOK® ZENITH® Endovascular System (Group B) and MEDTRONIC ENDURANT® Abdominal Stent Grafts (Group C). They were followed during three years from index procedure. With an algorithm and medical review of selected data, we excluded rehospitalizations unlikely to be endoprosthesis implantation-related. To create homogeneous cohorts, propensity score matching associating hospital status (public/private), DRG severity level and comorbidities at inclusion was used. Resources utilization were considered for both initial procedure and related rehospitalizations, from the national health insurance perspective. Results: In 2014, 916 patients in Group A, 1,239 in Group B and 1,503 in Group C were identified: 894 patients in each arm were matched. Patients were 73.8 ± 9.2 years old on average. 92.8% were men. DRG severity level in each cohort was level 1 in 50% of patients, level 2 in 40% and level 3 in 10%. Stay occurred in public hospitals in 57%. Mean length of stay was 6.7 ± 5.5 days for Group A, 7.0 ± 7.2 for Group B (p=0.0077) and 7.7 ± 7.1 for Group C (p=0.0001). At 3 years, 47.5% Group A patients, 50% Group B patients and 48.3% Group C patients had at least one rehospitalization. The mean 3-year cost was €15,674 ± 10,542 per Group A patient versus €16,508 ± 12,992 per Group B patient and €16,226 ± 10,413 per Group C patient. Conclusions: This is the first real-life analysis of the treatment of AAA by vascular endoprosthesis in France performed by using hospital claims databases.

PMD37
HOSPITAL EFFICIENCY Driven by CUSTOM SURGICAL PACKS in CATARACT and VITREORETINAL SURGERY
Hisao CCW1, Busuttil R1, O’Boyle D2, Kara R1
1Alcon Vision LLC, Fort Worth, TX, USA, 2Alcon Healthcare, S.A., Sevilla, Spain
Objectives: Previous research highlights that the optimal configuration of surgical packs is associated with the potential for substantial cost savings. In the case of cataract and vitreoretinal (vit-re)t surgery equipment related disposables (i.e. fluid-management systems/total-plus-pack and irrigation solutions), are frequently not included in the equipment-related disposables (c-pak) configuration. The objective of this research was therefore to estimate the impact of including equipment-related disposables (as part of c-pak configuration), on hospital efficiency. Methods: This research is underpinned by primary data collection in a cross-sectional analysis of cataract and vit-re surgery datasets conducted in the US: whereby a survey was conducted among US technicians (27 for Cataract, 26 for vit-re) and supply chain managers (19 for Cataract, 15 for VR). Technicians timed 140 cataract surgeries and 140 vit-re surgeries, recording surgical supply use. Using these inputs, a decision-analytic model was developed which estimates the time associated with surgery preparation materials management, and accounting for both types of surgeries. The model simulation was run from the perspective of a hospital performing 1,000 cataract and 250 vitreoretinal surgeries, annually. Custom packs were configured fully with or without equipment-related disposables, i.e. 100% use of each option was assumed. Results: Over a one-year time horizon, the configuration of custom surgical packs with equipment-related disposables was associated with a time saving of 17 hours in the case of cataract surgery, approximately equivalent to the time taken to perform 31 cataract surgeries. For vit-re surgery, the 100% use of disposables configuration resulted in a time saving of 4 hours, approximately equivalent to 3 vit-re procedures. Further time savings were demonstrated in the case of Material Management (37 hours) and Accounting (2 hours). Conclusions: When configuring custom surgical packs for cataract and vit-re surgeries, the inclusion of equipment-related disposables could improve hospital efficiency, through faster surgery preparation and streamlined materials management, facilitating the reduction of hidden costs.

PMD38
EFFICACY AND SAFETY OF TIMELY ENDOVASCULAR INTERVENTION vs. DELAYED INTERVENTION in CONSERVATIVE TREATMENT IN PATIENTS WITH CRITICAL LIMB ISCHEMIA (CLI)
Boyle D1,2,2 De Rego B1, Shaw R1, Holy C1, Hoeffel D6
1Health Economics & Reimbursement - OUS, Zavelten, Belgium
Objectives: In patients with early stages of critical limb ischaemia (CLI) (i.e., Rutherford-4/Fontaine-III), conservative treatment by pharmacotherapies is often the preferred strategy despite the suitability and availability of endovascular interventions as alternative. We compare the cost-effectiveness of timely intervention by bare-metal stent vs. delayed intervention using pharmacological treatment-only, from the German healthcare system perspective. Methods: A Markov model, with a five-year time-horizon, was developed with a total of seven states: intervention, stable (no further treatment required), major amputation, re-intervention, comfort care (no intervention possible), and all-cause death. The intervention state consisted of a stent in one arm and of conservative treatment in the other. The re-intervention state consisted of a first or second stent intervention in either arm respectively. Transition probabilities were obtained from a systematic review of clinical studies. Intervention and disease related costs were estimated from data provided by German Diagnosis-Related Groups (DRG) and the Federal Statistical Office (Destatis). Health-state utilities were obtained from literature. Primary outcomes were quality-adjusted life years (QALYS), costs, and incremental cost-effectiveness ratios (ICERs). Scenario analysis was performed with three re-intervention states within one cycle versus only one re-intervention in the base case scenario. Costs and QALYS were discounted at 3%. Analyses were performed in software R-heecond package. Results: In the base case, timely intervention resulted in an incremental cost of 4,117 € with 115 additional QALYS per patient. ICER for the base case is therefore 3,582 €/QALY. In three re-interventions scenario, the incremental cost was 3,987 € and additional QALYS 113 per patient, resulting in an ICER of 3,523 €/QALY. Conclusions: When compared with a delay by conservative treatment, timely intervention with bare-metal stent has proven to be cost-effective in early-stage CLI patients. Comprehensive micro-level disease costs and sensitivity analyses will provide further insights on the current preliminary findings.

PMD39
HEALTHCARE RESOURCE UTILIZATION AFTER TREATMENT WITH AN INNOVATIVE TOTAL KNEE SYSTEM
Chinich AS1,2, Ray R3, De Rego B1, Shaw R1, Holy C1, Hoeffel D6
1DePuy Synthes, Leeds, UK, 2DePuy Synthes, Amersfoort, Netherlands, 3DePuy Synthes, Johnson & Johnson, Somerville, MA, USA
Objectives: The choice of the implant used for primary total knee arthroplasty (TKA) may have an impact on outcomes. This study evaluated healthcare resource utilization following primary TKA using a novel periprosthetic system with a new femoral design (the ‘2nd Generation’ system) versus a traditionally designed total knee arthroplasty (TKA) implant (the ‘1st Generation’ system). Method: A decision analytic model was developed to estimate the resource utilization following primary TKA with the ‘2nd Generation’ system relative to a traditional TKA implant, based on the data from a recent, large, randomized controlled trial. Results: The 2nd Generation system was estimated to cost €6,397 more than the 1st Generation system. This was associated with a shorter length of stay in hospital (2.1 days), a shorter rehabilitation stay (0.7 days), fewer outpatient visits (1.8 visits) and fewer readmissions (0.1). Conclusion: The 2nd Generation system was associated with lower resource utilization following primary TKA compared to the 1st Generation system and may represent an opportunity for cost savings.