Medical Device/ Diagnostics – Cost Studies

**PMDD10**
**IMPACT ANALYSES OF FRACTIONAL FLOW RESERVE-GUIDED PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH MULTIVESSEL DISEASE IN FRANCE AND BELGIUM**


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**OBJECTIVES:** The FAME Study is an international multicenter randomized clinical trial (3.105), which provided a significant improvement in health outcomes for patients undergoing multivessel percutaneous coronary intervention (PCI) guided by fractional flow reserve (FFR) measurement compared to PCI guided by angiography alone (ANGIOD). The objective of this study is to estimate the impact of FFR-guided PCI on public health and on healthcare budget in France and Belgium and to compare these results with those of other European countries. **METHODS:** We used original patient-level data of the FAME Study (Tonino et al., N Engl J Med 2009) to estimate health effects for France and Belgium. Utilities were measured with EQ-5D using French, (time-trade-off based) and Belgian Torrance transformed (visual analogue scale based) weights. Costs were based on French and Belgian prices and DRGs catalogues. The size of the population eligible for the intervention was taken from national PCI registries to calculate number of major adverse cardiac events (MACE) avoided, quality-adjusted life years (QALYs) gained, and cost savings during a 2-year budget period (2011-2012) from the payer's perspective. We estimated ranges based on best and worst case scenarios regarding benefits, costs and FFR uptake. **RESULTS:** For both countries, FFR led to more QALYs, less MACE and lower costs compared to PCI in patients undergoing PCI within 2-year intervention period. The proportion of FFR-implied cost savings of 2.5 RE per sterilization cycle. The analysis covered a one year time horizon and assumed a 100% utilization of FFR technology. **RESULTS:** A 21% annual cost impact decrease was achieved with Sterrad™ versus Steam, leading to 11,870 € in annual savings. The more costly sterilization process (11,866 € versus 560 € per year) was clearly more than compensated by the reduction of 23,296 € in repair costs. The sensitivity analysis showed in 100% of the scenarios that Sterrad™ was cost-saving compared to Steam.

**CONCLUSIONS:** This study represents the first attempt to quantify the cost impact of the sterilization of rigid endoscopes with Sterrad™ by demonstrating that it is cost-saving compared to reprocessing with Steam. Despite the conservative approach of the model which may be in favour of Steam, use of Sterrad™ led to savings of 21% in the hospital budget.

**PMDD13**
**COST ANALYSIS OF VASCULAR CLOSURE DEVICES (VCD) IN THE UNITED STATES**

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**OBJECTIVES:** Recent literature suggests complication rates associated with current VCDs are comparable or reduced when compared to manual compression (AVF). However, well-documented differences exist among VCDs regarding the type and magnitude of complications. An indirect comparison was conducted to estimate the cost savings associated with use of novel VCD EXOSEAL™ vs. VCDs ANGIOSEAL™, MYNXV™, PERCLOSET™ and STARCLOSE™ from the US hospital system perspective. **METHODS:** Crude VCD-specific complication rates were calculated for manual compression and VCDs. An indirect treatment comparative analytic model was developed. Published literature was used to estimate the two main cost categories associated with VCD use: hospitalization, travelling and living expenses due to referral programs. **RESULTS:** The cost savings associated with use of novel VCD EXOSEAL™ vs. VCDs ANGIOSEAL™, MYNXV™, PERCLOSET™ and STARCLOSE™ from the US hospital system perspective were estimated to be $38,631,949 annually in the US, this translates to a predicted yearly cost-savings of $74,163,898 for the first year of implementation. **CONCLUSIONS:** This analysis adds a new component of support for the sterilization of rigid endoscopes with Sterrad™ by demonstrating that it is cost-saving compared to reprocessing with Steam. Despite the conservative approach of the model which may be in favour of Steam, use of Sterrad™ led to savings of 21% in the hospital budget.

**PMDD14**
**BUDGET IMPACT ANALYSIS OF TWO DRUG-ELUTING STENTS FOR DIABETIC PATIENTS IN SPAIN**

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**OBJECTIVES:** The presence of diabetes in patients needing percutaneous coronary intervention (PCI) is associated with increased risk of adverse outcomes, such as target lesion revascularization (TLR), and thus an additional cost burden. A recent indirect treatment comparison (ITC) showed that the drug-eluting stent (DES) Cypher™ improved clinical outcomes versus other DES resulting in cost-savings in diabetic patients. Based on this ITC, the objective is to conduct an adaptation to Spain and compare Cypher™ vs. XIENCE™ from a hospital perspective with global annual budget. **METHODS:** A global budget-impact model was adapted to Spain using a previously reported ITC of DES in diabetic patients. In brief, this ITC analysis uses the cost savings associated with use of novel VCD EXOSEAL™ vs. VCDs ANGIOSEAL™, MYNXV™, PERCLOSET™ and STARCLOSE™ from the US hospital system perspective. **RESULTS:** Our impact study shows that FFR-guided PCI in patients undergoing multivessel coronary disease is dominant and leads to considerable reduced numbers of MACE, more QALYs and substantial cost savings in the French and Belgian health care systems.

**CONCLUSIONS:** The treatment of patients with SNM therapy was calculated based on previous cost-effectiveness models and was assumed to be similar in both cases. Costs related to hospitalization, travelling, and living expenses for the patient and the caregiver were also considered, as these costs are reimbursed by the GHS to the patients and caregivers. **RESULTS:** The net economic impact for the GHS of treating 15 new patients from Las Palmas with SNM in Madrid would be €118,871 for the first year of the therapy, while treating these patients in Tenerife’s Center of Excellence would be related to a net impact of €50,780. The savings provided by a referral program inside the Region would amount to €68,091; driven by differences in hospitalization, travelling and living expenses. **CONCLUSIONS:** In Canary Islands, the designation of Regional Centers of Excellence for specialized and effective treatments, mainly of Regional Centers of Excellence for specialized and effective treatments, has resulted in a more frequent use of rigid endoscopes (RE). Several studies have reported significant reductions in the number of damaged RE and repairs when reprocessed with Sterrad™ instead of Steam. The aim of this study was to analyze the economic consequences of RE sterilization with Sterrad™ versus Steam from a hospital perspective. **METHODS:** A dynamic excel-based decision analytic model was developed. Published literature was used to estimate the two key variables (% of RE damage with Steam as well as with Sterrad™). A two-way sensitivity analysis was conducted (varying the two key variables up to ±25%, thus generating 121 different scenarios). Input data for the model collected as an average of 9 Spanish hospitals for 1,000 RE sterilization cycles (12). **RESULTS:** A 21% annual cost impact decrease was achieved with Sterrad™ versus Steam, leading to 11,870 € in annual savings. The more costly sterilization process (11,866 € versus 560 € per year) was clearly more than compensated by the reduction of 23,296 € in repair costs. The sensitivity analysis showed in 100% of the scenarios that Sterrad™ was cost-saving compared to Steam. **CONCLUSIONS:** This study represents the first attempt to quantify the cost impact of the sterilization of rigid endoscopes with Sterrad™ by demonstrating that it is cost-saving compared to reprocessing with Steam. Despite the conservative approach of the model which may be in favour of Steam, use of Sterrad™ led to savings of 21% in the hospital budget.