data about the manner in which PAM visualizes different tumor types. CONCLUSIONS: Using expert elicitation prior distributions for sensitivity and specificity, we derived evidence which underpins this study to synthesize models to establish cost-effectiveness. However, experts expressed difficulties estimating the performance based on limited data. The expression of uncertainty surrounding their beliefs reflects the infancy of the diagnostic method, however further research should be initiated to indicate whether these results are valid. Before that, the use of the elicited priors in health economic models requires careful consideration.

PM65

DIAGNOSTIC ACCURACY OF CLINICAL CHARACTERISTICS FOLLOWING MINOR HEAD INJURY: A SYSTEMATIC REVIEW AND META-ANALYSIS
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OBJECTIVES: A small number of patients with minor head injury deteriorate, resulting in serious injury or death. Clinical features are often used to identify which patients with a minor head injury are likely to deteriorate and therefore need CT scanning. To estimate the value of these characteristics for diagnosing intracranial injury (including the need for neurosurgery) in adults, children and infants, a systematic review and meta-analysis of diagnostic accuracy was undertaken.

METHODS: Citations were identified through electronic searches of several key databases, including MEDLINE, from inception, to March 2010. Where results allowed, pooled sensitivity, specificity and likelihood ratios were estimated through meta-analysis. RESULTS: Data were extracted from 71 studies (with cohort sizes ranging from 39 to 31684 patients). The most useful clinical characteristics for identifying those with intracranial injury were depressed or basilar skull fracture in both adults and children (positive likelihood ratio [PLR] = 9 – 10). Other useful characteristics in adults or children included focal neurological deficit, post traumatic seizure (PLR = 5 – 7), persistent vomiting, and coagulopathy (PLR 2 to 5). Characteristics that had limited diagnostic value included loss of consciousness and headache in adults and scalp haematoma and scalp laceration in children. Few studies were undertaken in children and even fewer reported data for neurological injury. CONCLUSIONS: Amongst other characteristics, depressed or basilar skull fracture indicated increased risk of intracranial injury and the need for CT scanning in adults and children. Other characteristics, such as headache in adults and scalp laceration of head injuries in children, do not reliably indicate increased risk.

PM66

EFFICACY AND SAFETY OF ARTIFICIAL DISC ARTHROPLASTY COMPARED TO SURGICAL FUSION FOR SINGLE LEVEL CERVICAL AND LUMBAR DEGENERATIVE DISC DISEASE: A BAYESIAN META-ANALYSIS
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OBJECTIVES: Randomized clinical trial (RCT) evidence comparing cervical and lumbar total disc arthroplasty (TDA) with interbody fusion for degenerative disc disease (DDD) has been provided for different devices by FDA Investigational Device Exemption (IDE) studies. A synthesis of this evidence is needed for decision making to select the appropriate intervention. This study aims to re-examine recent clinical evidence on TDA and evaluate its relative efficacy and safety to interbody fusion. METHODS: A systematic search of Medline and Cochrane library identified 6 RCTs comparing TDA with fusion. These FDA IDE studies on lumbar (3) and cervical TDA (3), had similar designs and patient characteristics and allowed pooling the outcomes. Efficacy was assessed by the FDA agreed outcomes: 1) 15 point improvement in neck disability index (NDI, cervical) or Oswestry disability index (ODI, lumbar); 2) neurological success; 3) no subsequent surgery or intervention classified as "failure," and 4) overall success: a composite measure of the previous outcomes in the absence of major adverse events. Meta-analysis was synthesised using a Bayesian meta-analytical approach. In contrast to a frequentist analysis, a Bayesian approach allows for calculating the probability of which intervention is the best and is therefore more intuitive for decision making. As a baseline scenario, a random effects analysis was performed on the intention to treat (ITT) data. RESULTS: The probability of lumbar and cervical TDA of having better outcomes than fusion at 2 years was 91% and 96% for overall success; 76% for ODI and 89% for ND1; 89% and 96% for neurological success; and 61% and 97% for secondary surgery, respectively. CONCLUSIONS: Based on this analysis, both lumbar and cervical TDA are likely to provide a greater net improvement relative to their respective interbody fusion techniques for single level DDD within 2 years in the elective patients.

PM7

EFFECTIVENESS AND SELF-MONITORING OF BLOOD GLUCOSE (SMBG) FREQUENCIES IN POORLY-CONTROLLED PATIENTS WITH NON-INSULIN-TREATED DIABETES (NITDM) WHO WERE NOT ACTIVE TESTERS PRIOR TO THE STEP STUDY.
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OBJECTIVES: In poorly-controlled patients with NITDM the Structured Testing Protocol (STEP) study has shown improved HbA1c outcomes of a structured testing group (STG) versus enhanced usual care (ACG) at 2 years (Stauber et al. 2011). – the study did not analyse whether those who did not receive the study – do in general not test systematically and might be particularly responsive to structured SMBG. For both groups HbA1c and the testing frequencies were calculated based on meter download data. RESULTS: At baseline both groups did not differ in baseline characteristics. Baseline HbA1c was 9.1 (Standard deviation 2.1%). In not active testers IIT analysis revealed a 0.59% (95%-CI: 0.07 to 1.11; p = 0.03) larger HbA1c difference in STG than in ACG (STG: –1.71% (–2.06; –1.37); ACG: –1.16% (–1.51; –0.83)). STG performed significantly fewer tests/day than ACG (mean = 0.72 vs. 1.94) and had a 15% difference in test frequency in comparison between the STG (263 tests/year) and ACG (350 tests/year). While a relatively high test frequency was imposed by the study protocol in the beginning of the STEP study, in last study quarter average testing was 0.63 per day in STG and 0.79 per day in ACG (n.s.) equivalent to 530 vs. 288 per year. CONCLUSIONS: Structured SMBG in not active testers was associated with higher reductions in HbA1c compared to standard SMBG use and compared to the overall STEP population. The use of structured SMBG may be especially cost-effective in terms of HbA1c reduction per test strips used in patients with poorly controlled NITDM who do not show a history of constant SMBG use.

PM68

SYSTEMATIC REVIEW OF THE IMPACT DIFFERENT METAL FEMORAL STEM (MFS) HAVE ON PATIENT OUTCOMES IN TOTAL HIP REPLACEMENT (THR) DUE TO OSTEORETROITIS (OA)

OBJECTIVES: Commonly used metals for MFSs are titanium (T), stainless steel (SS) and cobalt-chrome (CC). There is no consensus on the best type of MFSs in THR. The purpose of this meta-analysis is to compare the clinical outcomes of patients treated with different metal types. METHODS: Systematic review of MEDLINE and CENTRAL for randomised controlled trials (RCTs) and comparative observational studies (OS) in adult patients with OA undergoing THR reporting any of the following: failure/revision surgery, implant loosening, patient pain. Searching was restricted to English language and was completed in June 2011. Identified studies were assessed for quality using the Cochrane Risk of Bias Tool. Meta-analysis was conducted using a fixed odds ratio (OR), which performs better than other approaches at estimating ORs when there are several studies with no events in one or both arms. RESULTS: Of the 1,934 papers identified, 13 studies were included in the analysis: 2 RCTs and 11 OSs. Direct comparison demonstrated outcomes were more likely with TvsCC failure/revision (OR3.1, 95% CI: 1.37-7.82; p = 0.01); loosening (OR4.19, 95% CI: 1.90–9.1; p = 0.001); and periprosthetic failure (OR2.47, 95% CI: 1.75-3.48; p = 0.001). Significant heterogeneity was identified in the direct comparison of TvsCC for failure/revision surgery (I² = 65%, p = 0.001) and periprosthetic failure (I² = 80%, p = 0.001). Exploratory subgroup analyses by region where studies were conducted, cemented or uncemented stems, patient age, and study size, failed to generate a hypothesis for the potential cause of the heterogeneity. CONCLUSIONS: The available evidence suggests that stems made from cobalt-chrome are likely to perform better than titanium or stainless steel and should be used in the patient at the lowest risk of requiring a revision procedure than stems made from titanium or stainless steel.

PM9

A1CNOW® AS AMBULATORY MONITORING OF GLYCATED HEMOGLOBIN IN DIABETIC TYPE 2 (DM2) PATIENTS: SYSTEMATIC REVIEW
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OBJECTIVES: To analyze the best available scientific evidence on the accuracy and usefulness of ambulatory monitoring of glycated hemoglobin in diabetic patients with A1CNow® and laboratory test. METHODS: We performed searches in medical literature databases and the best results were obtained with a search in Medline (via Pubmed), with the keywords: (“Point-of-Care Systems” [Mesh] AND (“Diabetes Mellitus” [Mesh] OR “Diabetes Mellitus, Type 2” [Mesh] OR “Diabetes Mellitus, Type 1” [Mesh]) OR “Diabetes Complications” [Mesh]) OR (“Diabetes Mellitus, Complications” [Mesh] OR “The Hemoglobin, glycated” [Mesh] AND (“humans” [Mesh Terms] AND “Portuguese OR Spanish))). We selected two studies on accuracy and five studies on the usefulness of the test. RESULTS: Related to the accuracy, A1CNow® proved to be accurate compared with laboratory tests, being the best correlation between the method established between A1C values between 7 and 8.5%. Related to the usefulness, studies showed that the availability of A1CNow® results during the visit improves the decision-making by physicians. In one clinical trial that specifically investigated the usefulness of A1CNow®, active titration of insulin based on weekly visits and monitoring of A1C by A1CNow® led to a greater percentage of patients achieving A1C ≤ 7% at the end of follow-up compared to the group which was based on laboratory tests (41% vs. 36%, p < 0.0001). CONCLUSIONS: Based on the best laboratory evidence [available evidence level: 1B and intensity of recommendation: A], the use of A1CNow® for ambulatory monitoring of glycated hemoglobin in diabetic patients is accurate and reliable compared to the alternative diagnostic laboratory and useful in relation to the improvement of HbA1c levels.