hospital stay was higher in HOSP2 (11.3 vs. 14.5, p < 0.01). Significant differences were anyway confirmed only among non-infected patients. Our results were not confirmed with the bootstrap method. CONCLUSIONS: Cost of antibiotic therapy, its effects on the risk of infections and length of remission can be influenced by the therapeutic choices. Information on potential consequences is useful to implement optimal therapeutic approaches.

**TOTAL INSURANCE COST OF TREATMENT OF HIP FRACTURES ACCORDING TO THE LOAD STABILITY OF DIFFERENT SURGICAL METHODS**

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**OBJECTIVES:** The aim of this study was to examine blood transfusion patterns associated with various spinal surgery subtypes in the US inpatient setting. METHODS: This study used Premier’s US Inpatient Comparative Database, containing approximately 5 million admissions annually, from over 500 hospitals. A total of 31,808 inpatient discharges with a primary procedure code for spinal fusion surgery (ICD-9 codes 81.01–81.08, 81.31–81.38, 81.61; US projected total: 274,523) between July 2003 and June 2004 were selected and stratified into seven surgical subtypes based on the anatomic location of fused vertebrae and surgical technique. Blood management patterns were examined pre- and post-surgery. The association between spinal surgery subtypes and blood transfusion costs were examined using multivariate regression after controlling for various patient-(age, race, gender, severity), hospital-(location, teaching status, bedsize, region), and clinical-factors, inpatient mortality, payer type (Medicare, Medicaid, commercial/managed care), and physician specialty. RESULTS: Spinal fusion surgeries incurred average (maximum) blood transfusion costs of $149–$493 ($3,300–$13,120) per surgery, depending on subtype. As compared to cervical fusions, dorsal/dorsolumbar and lumbar/lumbosacral fusions as well as refusals were associated with significantly higher blood transfusion costs ($100–$195; p < 0.0001). Being operated by a neurosurgeon was associated with lower blood transfusion costs (p < 0.0001). Blood transfusion costs increased with increasing patient severity ($967), hospital bedsize ($100–$142), and urban/teaching status (p < 0.0001). Use of volume expanders and erythropoietic agents significantly increased blood transfusion costs by $184 and $294, respectively (p < 0.0001). Being male, discharged to home, and the use of topical sealants, were associated with lower total transfusion costs. CONCLUSIONS: This study demonstrates that the anatomical location, surgical approach, physician specialty, and hospital characteristics are all associated with blood transfusion costs. Newer technologies/medications may reduce blood transfusion use/costs, and this potential for reduction may be even greater in certain subgroups.

**DIFFERENCES IN BLOOD TRANSFUSION COSTS BY HIP AND KNEE REPLACEMENT AND REVISION SURGERY SUBTYPES**

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**OBJECTIVE:** To analyze blood transfusion patterns and associated costs in hip/knee replacement and revision surgeries in the US inpatient setting. METHODS: This study used Premier’s US Inpatient Comparative Database, containing approximately 5 million discharges annually, from over 500 hospitals. A total of 12,211 inpatient discharges with a primary procedure for hip (ICD-9 codes 81.51, 81.53; US projected total: 274,523 procedures) and 17,805 for knee arthroplasty (ICD-9 codes 81.54, 81.55; US projected total: 494,629 procedures) between July 2003 and June 2004 were evaluated. Blood management patterns were examined pre- and post-surgery. The association between surgery subtypes and transfusion costs were examined using multivariate regression after controlling for various patient-(age, race, gender, severity), hospital-(location, teaching status, bedsize, region), and clinical-factors, inpatient mortality, payer type (Medicare, Medicaid, commercial/managed care), and physician specialty. RESULTS: Average (maximum) blood transfusion costs of $448 ($11,838), $720 ($27,957), $321 ($17,328), and $427 ($5182) were incurred for total hip replacement, hip revision, knee replacement, and knee revision, respectively. Multivariate analyses showed that hip and knee revision costs were $272 and $66 higher than hip replacement, respectively (p < 0.0001). Being operated on by an orthopedic surgeon was associated with slightly lower total transfusion costs (p < 0.0001). Blood transfusion costs increased with increasing severity ($1049; p < 0.001), comparing most severe to mild. Use of hypotensive anesthesia and topical sealants were associated with a $131 and $101 reduction, respectively, whereas the use of erythropoietic agents was associated with a $210 increase in total transfusion costs (p < 0.0001). Blood transfusion costs increased...
OBJECTIVES: The actual extent of health technologies utilization is fundamental criterion for health technology assessment and management. Although crucial, this information may not be accurately available due to incomplete clinical registries and other limitations. As this is a major hindrance we developed a model enabling indirect assessment of the technology utilization, by measuring techno-markers, which are specifically associated with the technology under study. METHODS: During 2004 we evaluated the model by collecting data on techno-markers for cardiac surgery in one Israeli medical center. The Techno-markers chosen were compared to surgical registries and estimate error was calculated. Estimate error less than 5% indicates non-significant differences between techno-markers and surgical registries. RESULTS: Total of 1040 cardiac surgeries was compared to utilization of 1064 (2.3%) surgical-drapes and 1224 (17.7%) bone-wax units. In addition, 832 cardiopulmonary bypass (CPB) surgeries were compared to utilization of 874 (3%) oxygenators, 854 (2.6%) cardioplegia-sets, 1029 (23.7%) control-valves, and 848 (1.9%) aortic-cannulas. Furthermore, utilization of 208 “off-pump” coronary artery bypass (OPCAB) were compared to 204 (2%) air-water blowers, and 241 (15.8%) stabilizers CONCLUSIONS: Techno-markers demonstrated an estimate error less than 5% (surgical-drapes for cardiac surgeries, oxygenators, cardioplegia-sets, and aortic-cannulas for CPB, and air-water blowers for OPCAB) require further statistical analysis for establishing a comprehensive utilization model. Significant differences between observed and expected should alert the management system. In conclusion, valuable techno-markers must be distinctive to the technology and easy to monitor, thus their selection requires good clinical understanding of the technology. When chosen appropriately, techno-markers can provide a new approach for estimating and supervising the extent of health technology utilization.

PSU7

“TECHNO-MARKERS” FOR THE ASSESSMENT OF HEALTH TECHNOLOGY UTILIZATION

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OBJECTIVES: The actual extent of health technologies utilization is fundamental criterion for health technology assessment and management. Although crucial, this information may not be accurately available due to incomplete clinical registries and other limitations. As this is a major hindrance we developed a model enabling indirect assessment of the technology utilization, by measuring techno-markers, which are specifically associated with the technology under study. METHODS: During 2004 we evaluated the model by collecting data on techno-markers for cardiac surgery in one Israeli medical center. The Techno-markers chosen were compared to surgical registries and estimate error was calculated. Estimate error less than 5% indicates non-significant differences between techno-markers and surgical registries. RESULTS: Total of 1040 cardiac surgeries was compared to utilization of 1064 (2.3%) surgical-drapes and 1224 (17.7%) bone-wax units. In addition, 832 cardiopulmonary bypass (CPB) surgeries were compared to utilization of 874 (3%) oxygenators, 854 (2.6%) cardioplegia-sets, 1029 (23.7%) control-valves, and 848 (1.9%) aortic-cannulas. Furthermore, utilization of 208 “off-pump” coronary artery bypass (OPCAB) were compared to 204 (2%) air-water blowers, and 241 (15.8%) stabilizers CONCLUSIONS: Techno-markers demonstrated an estimate error less than 5% (surgical-drapes for cardiac surgeries, oxygenators, cardioplegia-sets, and aortic-cannulas for CPB, and air-water blowers for OPCAB) require further statistical analysis for establishing a comprehensive utilization model. Significant differences between observed and expected should alert the management system. In conclusion, valuable techno-markers must be distinctive to the technology and easy to monitor, thus their selection requires good clinical understanding of the technology. When chosen appropriately, techno-markers can provide a new approach for estimating and supervising the extent of health technology utilization.

PSU8

APPLICATION OF (PRO)SPECTIVE STUDY OF PATIENT SATISFACTION (PS) TO MONITOR QUALITY AND TO SUPPORT MANAGEMENT OF HEALTH CARE PROVIDER—AN EXAMPLE OF MEETING ISO 9001:2000 REQUIREMENTS BY THE CARDIOSURGICAL UNIT IN POLAND.

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BACKGROUND: Patient Reported Outcomes (PRO) and particularly Patient Satisfaction (PS) are nowadays important measures of the overall quality of health care. ISO 9001:2000 requires regularly performed, patient surveys as quality monitoring tools. OBJECTIVES: To monitor the quality of health care provided by a cardiosurgical unit in Poland using PS evaluation and to apply the results to its administration. METHODS: A 48-item questionnaire was designed that defines nine areas of medical care (reception, sanitation, stuff, rehabilitation, medical care, food & diet, patient rights, hospital, suggestions). In 45 scaled questions a five-point Likert scale (very poor, poor, barely acceptable, good, very good) was used. There were 3 open-ended questions. A survey of 150 patients was conducted in 2004. All patients, who underwent cardiosurgical procedures were included during their 7-days post-operative stay in the intensive care unit. For the analysis, all questions were categorized into 3 dimensions: technical, functional and environmental (A. Donabedian, 1980). RESULTS: A total of 128 questionnaires (87.5%) were returned of which 94 (73.5%) were from males. The majority (96.7%) were treated for the first time. Less then 1% were younger than 41 years, 52.8% were between 41 and 60 years. The majority 97.7% of answers were positive. Areas with relatively high share of negative assessment were identified as rehabilitation (4.6%), food & diet (5.0%) and patient rights (7.0%). Qualitative analyzes of food & diet area, illustrated main complain: 52.2% eating hours, 13% taste, 8.7% diet (7.0%). Qualitative analyzes of food & diet area, illustrated main complains: 52.2% eating hours, 13% taste, 8.7% diet needs. Additionally, functional and environmental dimensions were evaluated more positively then technical dimension. CONCLUSION: Patients overall presented a high level of reported satisfaction on aspects of their care relating to function and environment, and a lower level of satisfaction in technical aspects of care. This study demonstrates a practical application of PRO surveys in monitoring the quality of health care unit. The results could be applied in enhancing local unit management and improving the efficient distribution of resources.