SAVINGS OF THE USE OF RHBM-2 IN OPEN TIBIA FRACTURES FOR EUROPEAN HEALTH CARE SYSTEMS FROM A PAYER AND SOCIETAL PERSPECTIVE

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OBJECTIVES: Recombinant human bone morphogenetic protein (rhBMP2) is a growth factor for new bone formation. The objective was to calculate cost savings for the use of rhBMP-2 in grade III open tibia fractures for Germany, France and UK from a public health care system and a societal perspective, respectively. METHODS: A health economic model was developed based on clinical data from a previously published randomized controlled trial (BESTT study) comparing rhBMP-2 + standard of care (soft tissue management and intramedullary nailing) with standard of care alone. Clinical data were transferred using reimbursement 2005 tariffs (German-DRG, UK-NHS, French-Social Security tariffs) and published data for sickness payments and productivity loss for a one year time horizon. RESULTS: In Germany and France sickness payments are provided by public health care insurance and therefore, the payer perspective is identical to the societal perspective. In Germany, the use of rhBMP-2 for grade III open tibia fractures savings of direct costs of €1359 per patient and of 2714 € for sickness payment resulting in total savings of €4073 per patient that offset the price of rhBMP-2 (2950 €). For France, there are total savings of €3476 with savings in direct costs of €1197 and in indirect costs of €2279 which outbalance the price of rhBMP-2. For UK, rhBMP-2 achieves savings of 1126 € from a payer perspective which is below price of rhBMP-2 (1790 €). However, from a UK societal perspective total savings of £5139 make rhBMP-2 a cost saving strategy. For all three different countries the major driver for cost savings is the faster fracture healing with reduced expenses for sickness leave payments and productivity gain, respectively. CONCLUSION: rhBMP-2 is a cost saving strategy in grade III open tibia fractures from a payer perspective for Germany and France and from a societal perspective for UK.

METHODS & CONCEPTS

FORECASTING WITH TIME SERIES MODELS TO EXAMINE THE AVAILABILITY OF INPATIENT BEDS

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OBJECTIVES: To examine the relationship of admissions to discharges in the availability of inpatient beds at a medium sized southern hospital. METHODS: Data collected from several EDs were modeled using time series analysis to investigate the relationship of time of admission to length of stay; in addition, discharge data were collected to examine the time between admission and discharge to see if the time lag is related to bed availability. RESULTS: In the emergency department (ED) where arrivals can occur randomly, the peak time is between 9AM and 5PM in one hospital, increasing the length of stay for non-urgent patients while patients admitted to inpatient beds have considerable variability in their stay in the ED. At a second hospital, the peak time occurred at 3PM during the standard time of shift change. In addition, there is a time lag in beds, with admissions trailing discharges. CONCLUSION: Time series forecasting can find problems in the availability of beds; once identified, the problems can be solved. These time series techniques can be used to drill down into every 24-hour period to examine where increased waiting times result for bed unavailability.

DEVELOPING NATIONS AND COST-EFFECTIVENESS: THE METHODS MATTER

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OBJECTIVES: Examine the impact of adjusting for price differences (conversion to international dollars), as advocated by the World Health Organization (WHO), when conducting cost-effectiveness analyses in developing nations. METHODS: We created a hypothetical cost-effectiveness analysis, set in India, with 2 strategies: standard care (STD-CARE) and intervention. Two costing methods were used: unadjusted exchange rate (XCHG), and international dollars (IS) where non-traded goods (e.g. services or locally traded goods) and per-capita gross domestic product (GDP) were adjusted for international price differences using purchasing power parity (PPP) estimates from WHO. Three different interventions were considered: 1) Costs are all internationally traded goods (TRADED); 2) Costs are all

THE EFFECT OF PHARMACIST CONSULTATION ON PATIENT MEDICATION ADHERENCE: AN INSTRUMENTAL VARIABLE APPROACH

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OBJECTIVES: To assess the effectiveness of pharmacist consultation service in increasing patient medication adherence by applying the instrumental variable (IV) method to adjust for endogeneity. METHODS: This study used the Kaiser Permanente (KP) pharmacist consultation intervention survey data from 1993 to 1995. The effect of pharmacist consultation on medication adherence was measured via patients’ satisfaction with the service using patient ratings. Treating this variable as exogenous, a single-equation probit model was used. To address the endogeneity, bivariate probit models were employed using different sets of instrumental variables (IVs). The IVs used were measures of patients’ optimism, as well as the business of a KP pharmacy by measuring the amount of prescriptions filled at non-KP pharmacies. Smith-Blundell test was used to test the endogeneity. Over-identification tests were used to test the validity of the IVs. The weak instrument test was used to evaluate the IVs’ explanatory powers. RESULTS: All tests indicated that the IVs used were valid and the results were significant. The single-equation probit model renders that patients’ satisfaction with pharmacist consultation has significant effect on medication adherence (p < 0.0001). The bivariate probit models using different sets of IVs exhibit that the single-equation probit model underestimated the magnitude of the effect because of the endogeneity bias; the marginal effect of patients’ satisfaction with pharmacist consultation on medication adherence increased from 0.06 to about 0.27 after using bivariate probit models (p < 0.0001). In other words, once the endogeneity bias was corrected, pharmacist consultation demonstrated a greater impact on patient medication adherence. CONCLUSION: Pharmacist consultation plays a significant role in health care. Its effect can be evaluated on patient medication adherence via patient satisfaction with the service. This study reveals that the effect of this service was significant before addressing the endogeneity and, the magnitude of the effect increased after the endogeneity was removed.