AN ECONOMIC EVALUATION OF THE USE OF EXOGEN FOR FRESH AND NON-UNION FRACTURES OF THE TIBIA IN THE UK
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OBJECTIVES: Delayed healing of a tibial fracture is likely to cause substantial impairment to the patient’s quality of life, as well as increasing the risk of complications. This study estimates the total costs of using Exogen, an ultrasound device designed to expedite the healing process, in addition to current practice. METHODS: An economic model was designed in order to estimate the costs and outcomes of each treatment. The model compared Exogen against conservative treatment (i.e. plaster cast), and also considered the cost impact of using Exogen to augment patients who underwent surgery. Resource use for each stage in the pathway was multiplied by the unit cost of that resource. Effectiveness data were drawn from published sources. Cost data were derived from existing national databases, whilst resource use data were based on interviews with clinical experts. The perspective that is of the National Health Service (NHS). RESULTS: Exogen is expected to be cost saving for patients with a fresh tibial fracture who are at risk of delayed healing or non-union. For a current smoker, for example, whose probability of healing is around 63% of the general population, the addition of Exogen reduces expected cost by £1300–£1600 per patient. CONCLUSION: Between 8% and 9% more patients are likely to be healed with Exogen after one year of treatment. For patients with a non-union (defined as a fracture which remains unhealed at 6 months), using Exogen before surgery (where possible and clinically appropriate) is considered to be a lower cost option than immediate surgery. This approach is expected to reduce cost by almost £3500 per patient, with no significant reduction in fracture healing. The funding for this study was provided by Smith & Nephew.

HEALTH CARE UTILIZATION AND COSTS ASSOCIATED WITH BLUNT AND PENETRATING TRAUMA IN A UNITED STATES MANAGED CARE POPULATION
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OBJECTIVE: Few studies have examined the direct economic burden of traumatic injury. In this study, we estimated total per-patient charges for healthcare resources consumed by patients with blunt or penetrating trauma in a population of US managed care organization (MCO) enrollees. METHODS: Retrospective claims from the Ingenix MCO database were analyzed for 14,841 patients hospitalized for blunt or penetrating trauma in a population of US managed care organization (MCO) enrollees. METHODS: A discrete event simulation was developed to follow a patient for a year from initiating oral opioid treatment. The optimal morphine dose is assigned according to the following base-case conversion ratios: hydromorphone (1 : 5), oxycodone (1 : 2). At the end of a dose adjustment period, patients can be satisfied or dissatisfied and stop medication. Pairs of identical patients are created; one receives hydromorphone, the other oxycodone; undergo dose adjustments, may suffer adverse events, recurrence of pain, or discontinue. Dissatisfied patients are prescribed other pain medications, steroid injections or surgery. Utilities are assigned pre-treatment, updated until reaching optimal dose, and when patient is non-compliant or dissatisfied. After one year, the quality-adjusted time and costs are recorded. Distributions of pain relief sleep quality, satisfaction and utilities are from clinical trial data. A pain specialist ensured the simulation reflects the course of managing non-malignant pain with opioids. Direct medical costs are in 2005 Euros. Sensitivity analyses were conducted. RESULTS: Based on 100 replications of 1000 patient pairs over one year on a mean daily morphine equivalent dose of 90 mg, 14% were dissatisfied. Average time to optimal dose with oxycodone was 7.9 weeks, approximately 3 weeks longer than hydromorphone. Costs per patient were estimated at €1959 with oxycodone vs. €2101 with hydromorphone. Hydromorphone was predicted to increase QALYS by a mean 0.017 years per patient, resulting in ICER = €8343/QALY gained. Sensitivity analyses revealed that results were most sensitive to the conversion ratios, with hydromorphone (1 : 7.5) being dominant over oxycodone. CONCLUSIONS: Based on these analyses, OROS® hydromorphone is expected to yield health benefits at a reasonable cost in Germany.