ECONOMIC EVALUATION OF A UNIVERSAL CHILDHOOD PNEUMOCOCCAL CONJUGATE VACCINATION STRATEGY IN IRELAND

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OBJECTIVES: To evaluate the cost-effectiveness of implementing a universal infant 7-valent pneumococcal conjugate vaccine (PCV7) programme in the Irish health care setting. METHODS: A model was constructed to follow a cohort of vaccinated and unvaccinated individuals from birth over a 10 year period. The number of life years gained (LYG) from the vaccination programme was the primary outcome. The model was constructed using MS Excel and was run in 6 monthly cycles with the exception of the first year of age, which was divided into three age bands: 0–2 months, 2–6 months and 6–12 months. Incidence data, vaccine efficacy and background mortality were based on national data and/or published evidence. A cost of illness estimate for each pneumococcal infection was determined using decision tree analysis that considered direct costs only. The reduction in events that would be associated with PCV7 vaccination and the mortality and cost resulting from these events were analysed. In a separate sub-model the effect of herd immunity was investigated where it was assumed that indirect protection would be conferred on the unvaccinated adult population for a period of one year. RESULTS: Implementing a PCV7 vaccination programme in Ireland in a birth cohort of 61,000 infants would be expected to prevent 7,703 cases of pneumococcal related infections over 10 years, resulting in savings of €2.05 million, increasing to €4.6 million if the effect of herd immunity is included. The baseline ICER is €98,279/LYG which reduces to €3,162/LYG when the effect of herd immunity is included. CONCLUSION: Universal infant pneumococcal conjugate vaccination could be considered highly cost-effective in the Irish health care setting from a health care payers perspective, if viewed in terms of the herd immunity effect. The results of this study have positive ramifications for countries in the early stages of health technology assessment.

USE OF AN ADMINISTRATIVE DATABASE TO ESTIMATE THE ECONOMIC BURDEN OF FEBRILE NEUTROPENIA

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OBJECTIVES: To estimate from the national database of hospital admissions in 2005, the economic burden in France of febrile neutropenia (FN) associated with myelosuppressive chemotherapy. METHODS: In France, public and private hospital admissions are recorded in administrative databases that generate Diagnosis Related Groups (DRGs), ICD10 diagnosis and procedure codes. Admissions with FN were extracted with codes combining cancer, chemotherapy, and drug-induced neutropenia. These were then categorized into those with a principal diagnosis of FN, those in which FN prolonged length of stay, and those where planned treatments were cancelled due to FN. The costs of admissions to public hospitals were obtained from an annual study of a sample group of institutions. This study is also used to generate charges to the payer (official DRG tariffs). Costs in private clinics were estimated with the 2004 reimbursement database, to which medical fees were added. Charges to the health care system were estimated with the official 2007 DRG tariffs. RESULTS: In 2005, the total number of patient admissions meeting selection criteria was 38,266 i.e. 3% of all admissions for chemotherapy. They comprised 41% were due to FN, 56% were prolonged hospitalizations because of FN and 3% were procedures cancelled due to FN. In public hospitals, the mean cost per admission due to FN was €3636 (n = 13,923), mean charge was €3565. In private hospitals, this cost was €1930 per admission (n = 1517). For inpatient admissions to public hospitals alone (n = 9444), the mean cost was €5030, mean charge €4931. Total cost to the payer for public and private admissions was €54 million i.e. 3% of the total cost for chemotherapy in France. CONCLUSION: Administrative databases can be used to estimate the economic burden of FN, a frequent complication of chemotherapy. They could be a relevant tool for studying the potential cost savings derived from appropriate preventive use of colony-stimulating factors.

AN AUDIT OF HLA-B*5701 SCREENING METHODS AND COSTS IN THE UNITED KINGDOM

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OBJECTIVES: To understand the infrastructure for HLA-B*5701 screening within the UK and establish the direct cost of correctly screening patients. METHODS: Presence of the HLA-B*5701 allele is associated with predisposition for hypersensitivity to abacavir (KivexaTM, GSK). Some HIV clinicians routinely screen patients for HLA-B*5701 prior to prescribing abacavir. The characteristics and relative costs of available screening methods are therefore integral to the impact of screening on cost-effectiveness of abacavir in practice. Yet this information is poorly understood. No definitive reference cost is available and screening is provided by many laboratory services, to varying specifications and at different cost. Obtaining robust data therefore required a creative approach. Extensive planned research with clinicians and the sales force informed the content and structure of the audit. Interviews were conducted with 25 major HIV centres (currently screening patients for HLA-B*5701 prior to initiation of abacavir therapy), and an advisory board with expert panellists was undertaken during 2006. Methodologies used by different laboratories were explored (with laboratory personnel if necessary) to determine whether screening of sufficient resolution was provided. RESULTS: The audit found three regional networks of laboratories providing genetic screening services to hospitals on a local and national basis. Hospitals routinely accessed different laboratories for different clinical services. Result turnaround times varied from 5 to 14 days, although most laboratories could provide an immediate (2 hour) service if required. The cost of screening varied between 35–90 GBP. Costs were minimised in larger laboratories predominantly through using the latest technologies, batching samples, short transport distances and the use of blood sample aliquots already extracted for other tests. CONCLUSION: UK HIV clinicians have routine access to screening technologies for 4-digit resolution of HLA-B*5701 that are affordable, quality assured and rapid. The impact of this information on the cost effectiveness of abacavir is the subject of ongoing research.

INFECTION—Methods and Concepts

Abstracts