OBJECTIVE: There is ongoing discussion in the Netherlands about the introduction of hepatitis B (HepB) vaccination into the national immunisation program. The purpose of this study was to analyze the cost-effectiveness of general vaccination of newborns in addition to the current policy, screening of pregnant women and subsequent immunisation of newborns from HBsAg-+ mothers ("screen + vaccinate") in comparison with the current strategy of screening only ("screening only"), from a health care payer perspective. **METHODS:** The incidence of HepB infection over the next 50 years was simulated with a dynamic model, describing a population of age 0–60 years, with 6 sexual activity classes (both for hetero- and homosexual groups). Immigration from more endemic countries was modelled as yearly additional incidence of carriers in the population. Progress of disease after infection was computed with a Markov-chain model, that predicted future patient numbers, life-time costs of infection, and life-years lost after infection. The main outcome parameter was cost per life-years gained. Costs (in 1999 EUR) and effects were discounted at 4%. **RESULTS:** Cost per life year gained appeared to be highly sensitive to the assumed percentage of carriers among immigrants, vaccination costs and to discounting of effects. Cost per life year gained in the screen + vaccinate scenario ranged from approximately EUR 25,000 (6% carriers among immigrants) to EUR 75,000 (1% carriers among immigrants). If effects were not discounted, cost per life year gained were below EUR 9,000 in all models explored. **CONCLUSIONS:** Compared to other interventions, hepatitis B vaccination is not cost-effective in low endemic countries such as the Netherlands. However, this conclusion depends heavily on the convention to discount effects at a similar rate as costs. The application of standard methodology is unfavourable for programs that prevent negative health outcomes in the mid- to long-term.

PID4

HOSPITAL ANTIBIOTICS UTILIZATION EVALUATION

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OBJECTIVE: 1) To describe the frequency and distribution of hospital antibiotics use. 2) To evaluate the appropriateness of the prescription to diagnostic and therapeutic criteria. **METHODS:** It is an observational cross-sectional study of 411 clinical records obtained by random sampling over all hospital discharges between 01/01/99 al 31/09/99. Information was sought on the following variables: identification, diagnosis, process indicators, treatment changes and causes, indicators of clinical evolution, and diagnostic and prescription criteria. The information was collected and reviewed by the authors. Criteria of infection and those of appropriateness of prescription were obtained from the Centres for Disease Control and others scientific societies. **RESULTS:** Antibiotics prescription was registered on the clinical record in 25% of cases; 49% of antibiotic treatments were prescribed in the hospital, 30% of them were treatment changes, while 51% of antibiotic treatments were prescribed in the reference hospital. Amoxicillin-Clavulanate combination and ofloxacin account for 88% of the prescriptions in the HMN and 76% of the total antibiotic treatments. Between 44% and 61% of the diagnosis were adequate to the criteria, with a mean of 54%, and between 91% and 100% were appropriate prescriptions. Mean treatment length was 9.6 days, and only 14% of the urinary tract infection treatment length was correct; an intravenous catheter was kept 80% of the treatment. **DISCUSSION:** While most of the antibiotic prescription in this study were appropriate to the clinical diagnosis, only half of the diagnosis were in keep with the diagnostic criteria used in this study and the urinary tract infection as well as the intravenous duration treatment appear to be long. The consequences of these findings are increased cost and iatrogenia. The adequacy of diagnosis to objective criteria and the duration on treatment, especially intravenous treatment, are the main areas for improving. The recommended strategies are: 1) utilization consensus 2) training programs 3) medical audits 4) development of diagnostic and therapeutic criteria adapted to the hospital.

PID5

MEDICO-ECONOMIC MODELLING OF INFLUENZA MANAGEMENT IN EUROPE: METHODOLOGY USED IN FRANCE AND GERMANY

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OBJECTIVES: Influenza is a highly contagious disease that remains a major cause of morbidity and mortality in Europe. The socio-economic impact of the disease is underestimated. The study aimed to model options for influenza management in three European countries (France, Germany, United Kingdom). **METHODS:** Cost-of-illness (COI) and cost-effectiveness (CE) models were developed to assess the economics of influenza prevention for defined adult groups (employed people, elderly, high-risk patients). The initial models were developed based on international and UK published data. Treatment efficacy and the general epidemiology of influenza were assumed to be similar for the three countries. The adaptation of the general models was based on: 1) a country specific literature review was performed to collect baseline models parameters: patient demographics, epidemiology, attack rate, occurrence probabilities, complications and death, current treatment patterns, general and specific clinical practice guidelines, clinical effectiveness of current therapies, medical resource utilization and productivity loss;

2) two workshops in each country with a panel of local influenza experts to validate the treatment patterns, to estimate missing values (event occurrences, transition probabilities, hospitalization and indirect costs) and to ensure the external validity of the local models. **RESULTS:** It was possible to keep the general structure of the models and to validate the basic assumptions. However, major adaptations relating to influenza management and the associated costs were required. **CONCLUSIONS:** Even though France, Germany and the UK have similar socioeconomic levels, the therapeutic and diagnostic management of influenza differs between them. Indeed, the direct transposition of a general model from one country to another one is not possible: a cultural adaptation is required to make the model convincing, and therefore, useful at a national policy level. These adaptations must reflect differences in the patterns in service delivery, in incentives to patients and physicians, and in the propensity to seek treatment.

PID6

CANADIAN COST-EFFECTIVENESS OF COMBINATION RIBAVIRIN/INTERFERON ALPHA-2B THERAPY FOR TREATMENT-NAÏVE VIRAL HEPATITIS C

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OBJECTIVE: Combination treatment with ribavirin and interferon alpha-2b in treatment-naïve patients with chronic hepatitis C virus produces an enhanced clinical response compared with interferon alpha-2b treatment alone; adding the second drug, however, will result in greater costs. Clinical effects and costs for combination therapy were compared to those for interferon alone in a cost-effectiveness analysis for the Canadian healthcare environment. **METHODS:** Data from an international clinical trial comparing 24 and 48 weeks of combination therapy to 48 week interferon alone were applied to a previously published model which tracked the health outcome of patients with chronic hepatitis C. Resource use and quality of life was determined by a Canadian physician panel and from patient-derived utility data; cost information in 1998 Canadian dollars was obtained from major health centres across Canada and from published sources of Canadian cost data. **RESULTS:** Resource use by patients with chronic hepatitis C can be minimal in the early stages of the disease, progressing to hospitalization and need for liver transplantation in the advanced stages. Applying dollar values to resource use, annual costs per disease state were found to range from under $200 per patient for the milder stages, up to greater than $90,000 per patient for transplantation. For drug treatment, interferon for 48 weeks cost $4,976 while combination therapy for 24 weeks was $9,887 and for 48 weeks $12,840. Modelling health outcomes over the course of the disease along with costs for combination therapy compared to interferon alone resulted in a marginal cost-effectiveness ratio of $3,429 per discounted quality adjusted life year. **CONCLUSIONS:** Results suggest that initial treatment for chronic hepatitis C in Canada with 24 or 48 weeks of combination therapy, when compared with 48 weeks of interferon alone, should be cost-effective and economically attractive by conventional standards.

PID7

MULTITHERAPIES: TOWARDS COST-SAVING STRATEGIES IN REAL LIFE?

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OBJECTIVE: To pragmatically assess the effect of HAART strategy on effectiveness and cost among unselected HIV-infected persons. **METHOD:** We compared two groups of patients followed at Rothschild public hospital in Paris. We extracted longitudinal data from a random sample of 99 ART-naïve patients in which a HAART treatment was initiated between 10/1/96 and 4/1/97 (HAART group). Each patient of the HAART group was randomly matched for age, sex and CD4 cell count to a corresponding control patient entered in the database before the introduction of HAART, between 10/1/94 and 4/1/95 (CONTROL group), whatever the treatment was. The comparison criteria, on a two-year period, are survival rate, immune recovery rate (CD4 count), opportunistic infections and use of resources (ART, other treatment costs and hospital costs). **RESULTS:** 2-year survival curves are similar in both groups ($P = 0.1502$, Log-Rank test). Immune recovery rate, at the end of the follow-up, is significantly higher among HAART patients, with 35% vs. 13% with a CD4 count above 500/mm^3. Both mean and median CD4 cell counts are greater in HAART group (344/mm^3 and 320/mm^3 vs. 280/mm^3 and 245/mm^3 respectively). The mean cost of ART is higher in HAART group (+171%). Nevertheless, this financial charge is fully balanced by savings in other treatment costs (−62% largely due to less opportunistic infection treatments) and reduction in hospital costs (−25%). **CONCLUSION:** We pragmatically compared two groups of HAART-treated and non-HAART-treated patients, regardless of their disease stage. Results show the benefit of