scale. Direct medical costs are divided into outpatient and hospital costs. Outpatient costs (medical visits, medication, additional tests, physiotherapy sessions) are to be assessed using French public prices and Social Security tariffs. Hospital costs are to be assessed using the PMSI database. Indirect costs are to be assessed in terms of the number and duration of sick-leaves. Costs are to be assessed from the perspectives of society, patient and Social Security. The comparability of the 2 patient groups assessed from the perspectives of society, patient and Social Security. The comparability of the 2 patient groups is to be statistically analysed before comparing results.

CONCLUSION: Given the public-health problem caused by epidemic infantile bronchiolitis each year in France, the results of this pragmatic medicoeconomic study will aid public policy makers and practitioners in determining the most cost-effective Health care management strategies.

Abstracts

**PMD 18**

**INDIRECT COSTS OF A LARGE-SCALE IMMUNIZATION PROGRAM—WHEN COSTS EXCEED SAVINGS**

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OBJECTIVE: To show that indirect intervention costs can be crucial for the results of large-scale prevention programs. METHODS: We estimated the indirect costs of the Dutch meningococcal serogroup C conjugate immunization program of all persons aged 14 months to 18 years that ran from June 2002 until January 2003. Using the friction cost method, we measured the indirect intervention costs caused by additional health visits due to the catch-up immunization program and side effects of immunization as well as the indirect savings due to averted cases of meningococcal disease and its complications. For valuing the work-loss of parents accompanying younger children (less than 15 years) we used the average labor costs per employed parent that was computed by weighting the age- and sex specific labor costs of employees with the age- and sex specific probabilities of being a parent. For valuing the work-loss of persons aged 15 years or older, we used the age- and sex-specific labor costs per capita. RESULTS: The immunization program caused indirect intervention costs of €17.14 million. As the indirect savings due to prevented cases of meningococcal disease were only €0.75 million, the net indirect costs were €16.39 million. Including the indirect costs increases the cost-effectiveness ratio of the immunization program from about €13,200 per life year gained to about €17,700 per life year gained. These results are sensitive to the work-time loss per vaccination, the way children were called in for vaccination, i.e. whether by birth-cohort or by ZIP-code, and the approach for indirect cost measurement. CONCLUSIONS: Indirect intervention costs can be substantial and should always be measured. Failing to do so cannot only lead to misleading results but also to higher than necessary indirect costs as the decision maker might not take them into account when planning the program setup.

**PMD 19**

**THE COST-EFFECTIVENESS OF TREATMENT FOR TYPE 1 DIABETES**

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OBJECTIVE: While Type 1 Diabetes only affects 5–10% of the 16 million people with diabetes, it accounts for about 30% of the total costs. The primary purpose of this presentation is to review the literature and identify cost-effective treatments for Type 1 Diabetes. METHODS: A search was conducted using Medline and other international publications and resources. Articles were retrieved and reviewed with results synthesized and summarized by the cost effectiveness of the intervention or treatment method. RESULTS: Studies on the cost-effectiveness of treatment for Type 1 Diabetes proved difficult to locate. Economic information regarding treatment varied greatly across studies, but generally demonstrated a cost benefit. For interventions of diabetic retinopathy, studies using simulated populations showed a cost-savings for panretinal photocoagulation for proliferative diabetic retinopathy and focal photocoagulation for macular edema. A similar cost-saving was found in pre-conception care with a cost benefit ratio of the care program being 5.19, meaning for every $1 spent on the program, there would be a net savings of $5.19. While the rate of costs or savings were varied, interventions for diabetic nephropathy and glycemic control were clearly cost effective. Two interventions assessed did not demonstrate cost-effectiveness: 1) the self-management training intervention which showed only potential cost-effective results, and 2) the self-monitoring of blood glucose (SMBG) which displayed unclear results. CONCLUSION: This review shows that most of the available studies on cost-effectiveness of Type 1 Diabetes deal with interventions geared to prevent or arrest the progression of complications. The most accessible ones are studies on diabetic retinopathy and nephropathy. Studies that address cost-effectiveness of self-management and SMBG are difficult to find. For a chronic disease such as Type 1 Diabetes, non-empirical study data is more common, and the source of cost-effectiveness data (for modeling, etc.) has also been derived mostly from non-empirical sources.