

Workgroup on costs and cost-effectiveness of interventions

Executive summary

Aims

The global aims of the present project concern:

- (1) the estimation of costs for society of problem drug use, and
- (2) the assessment of the cost-effectiveness of different forms of intervention using models.

The main questions explored by the project are:

- what is the cost-of-illness related to some infectious diseases (HepB/C and HIV) among IDUs?
- what is the influence of epidemiological developments on resulting health care costs for these diseases (cure/care/prevention)?
- what information is needed to ultimately construct cost-effectiveness scenarios for different interventions?

During the project the emphasis shifted to HCV specifically in view of the relatively little knowledge about this disease.

Results

The results of the workgroup's activities are presented in Annex 1 to 4, and in section *1.4 Monograph* of the present report.

Annex 1. Report Workshop: The impact and costs of HCV, HBV and HIV infection in injecting drug users in the European Union. Its main conclusions include:

- basic epidemiological research trying to elucidate the dynamics of the spread of HCV in IDUs is still inconclusive and motivates further epidemiological study. Data needs and methodological problems concerning the epidemiology of HCV have been identified;
- a general overview of the spread of HIV/AIDS, HBV and HCV among IDUs in Europe shows that HIV, HBV and HCV constitute a major health burden for IDUs in Europe and are still not under control. Harm reduction has become an acceptable option in most EU countries, but coverage can be improved;
- modelling approaches for transmission of HCV and related data needs have been defined. Modelling of the spread of HBV and subsequent economic evaluation of potential interventions (vaccination, screening) have already been elaborated. This work provides the format for the evaluation of interventions with respect to HCV;
- further economic research should be devoted to prevalence-based estimation of costs, and the extension of the estimation of health care costs to social costs of drug addiction.

Annex 2. Wiessing LG, Hartnoll R, Houweling H, Jager JC, Downs AM, Hamers F: Impact and Control of AIDS, HIV, and Hepatitis B and C Among Injecting Drug Users in Europe: An Exploratory Overview. It presents amongst others:

- estimates of historical HIV incidence derived by back-calculation from AIDS cases followed by recent data on seroprevalence of HIV, HBV, and HCV;
- a general impression of implementation and possible effects of harm-reduction measures in countries of the EU;

- Table 2. Prevalence of antibodies against hepatitis B and hepatitis C among injecting drug users in EU countries, EMCDDA 1998

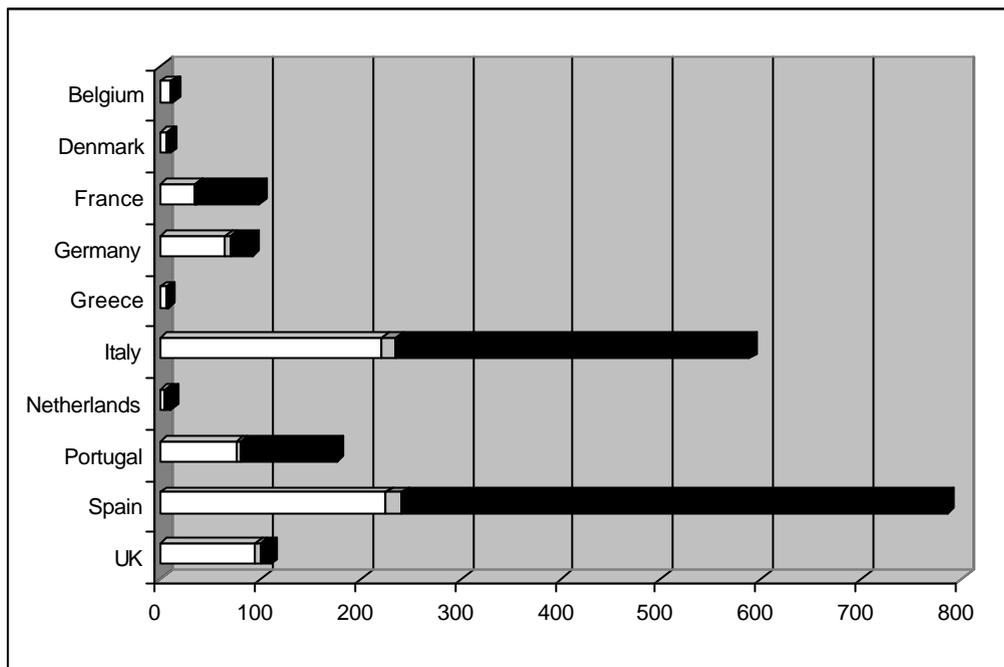
| | Hepatitis B | | | Hepatitis C | | |
|------------------|-------------|--|-----------------------|-------------|---|-----------------------|
| | Year | Data | Percent anti-HBV + | Year | Data | Percent anti-HCV + |
| Austria (1) | 1996 | Vienna: Hospital, low threshold treatment | (50-56) | 1996 | Vienna: Hospital, low threshold treatment | (72-79) |
| Belgium | - | - | - | - | - | - |
| Denmark (2) | 1995 | Estimate | 21 | 1995 | Estimate | 50 |
| Finland (3) | 1997 | Helsinki: Needle exchange, self-reports | (34) | 1997 | Helsinki: Needle exchange, self-reports | (53) |
| France (4) | - | - | - | 1995 | Survey treatment centres, self-reports | 53-70 |
| Germany (5) | 1996 | Dortmund: Treatment | (48) | 1996 | Dortmund: Treatment | (63) |
| Greece (6) | - | - | - | 1997 | Methadone/drug free treatment | 50-94 |
| Ireland (7) | - | - | - | 1992/93 | Dublin: Treatment | (84) |
| Italy (8) | 1997 | Treatment | 40 | 1997 | Treatment | 67 |
| Luxembourg (9) | 1997 | Treatment, self-reports | 22 | 1997 | Treatment, self-reports | 19 |
| Netherlands (10) | 1994/96 | Rotterdam/Heerlen/Maas tricht: Treatment | (59-63) | 1994/96 | Rotterdam/Heerlen/Maas tricht: Treatment | (74-84) |
| Portugal (11) | - | - | - | 1996 | Treatment, self-reports | 74 |
| Spain (12) | 1996 | Treatment | 59 | 1996 | Treatment | 83 |
| Sweden | 1997 | Study 9 prisons, saliva (13) | 55 | 1994 | Stockholm: Study prison/treatment (14) | (92) |
| United Kingdom | 1996 | Unlinked Anonymous, England and Wales (15) | 22 | 1994 | Survey treatment centres (16) | 48-77 |

Annex 3. Jager JC, Achterberg PW, Wiessing L, Hartnoll R, Postma MJ: Infectious diseases and drug abuse: conceptual modelling of consequences and interventions. Poster presentation. It presents amongst others:

- a conceptual model covering the field of infectious diseases and drug abuse. Its five basic components are drug use, drug use-related policy, determinants of drug use and effects, individual effects of drug use and the social burden of drug use.

Annex 4. Postma MJ, Wiessing LG, Jager JC: Pharmaco-economics of Drug Addiction; Estimating the costs of HCV, HBV and HIV infection among IDUs in EU-countries. It presents amongst others:

- estimated costs for drug-addiction related HCV, HBV and HIV amounting to EUR1.89 billion in the baseline with HCV taking account of approximately 40% of these costs;
- the distribution of these costs over the ten countries considered: Spain and Italy make up 72% of total EU-costs (\pm EUR1.4 billion) with relatively large shares for drug-related HIV costs. Estimated drug-related costs in the UK and Germany are primarily caused by hepatitis;
- estimated lifetime costs of HIV-infection for the ten EU countries. These vary from EUR42,500 for the UK to EUR90,800 for France;
- Figure 3: Costs of HCV (white), HBV (grey) and HIV (black) in €(millions) for ten EU-countries.



1.4 Monograph

Jager JC, Wiessing LG, Limburg LCM, et al. Impact and costs of Hepatitis C in injecting drug users. (Lisbon: EMCDDA, 2002).

The monograph is very much an elaboration and extension of the work as reported on in the annexes. It presents amongst others:

- a conceptual model of the drugs problem, which is an elaboration of the model presented in Annex 3. The model structures the complexity of the drugs problem and the interrelationships between the subject matter of the parts of the book.

Part 1

- information on the latest developments in the diagnostic and treatment modalities of HepC and more specifically in IDUs. In the last few years major advances in the treatment of HepC have been made. IDUs, however, seem as yet to profit little from them;
- epidemiological data on the spread of HepC in IDUs in Europe and European data on coverage of prevention responses;

Part 2

- the results of a mathematical model for HepC transmission dynamics and of a model of the population of IDUs in the European Union;

Part 3

- estimates of the health care costs related to injecting drug use-related HepC, (HIV and HepB) calculated by means of an incidence/prevalence model;
- outcome of a comparison of no antiviral treatment to antiviral treatment in IDUs with histologically moderate HepC. Initial combination therapy in this group should reduce the risk of cirrhosis, prolong life and be cost-effective.

Part 4

- estimates of indirect costs by means of the market approach and human capital approach and of the social costs of injecting drug use in particular in France by means of the cost-of-illness method and in Switzerland by means of a newly developed valuation method;

Part 5

- policy options for the prevention and management of HepC in IDUs and estimates of the cost-effectiveness of treatment and prevention, in particular methadone maintenance program;
- models that enable the relative weighing of various drug control programs thereby providing a tool for the division of scarce resources among these programs.

What still needs to be done

Models used for the analysis of transmission and prevention of HCV in IDUs or for estimates of drug abuse-related costs need to be build and elaborated.

Methods to estimate the costs need to be further developed.

Building models is an iterative process, better data enables better models, which in turn enable more adequate estimates. Better data need to be obtained on

- HepC disease stages, and their determinants and riskfactors in IDUs;
- HepC-related health care utilization by IDUs;
- HepC prevention strategies, in particular their efficacy, efficiency and costs.

Co-ordinator: Hans Jager

National Institute of Public Health and the Environment (RIVM)

Division for Health Services Research

Department for Public Health Forecasting

Antonie van Leeuwenhoelaan 9

P.O. Box 1

NL - 3720 Bilthoven

The Netherlands

Email: Hans.Jager@rivm.nl

Participants: Maarten Postma (The Netherlands)
Lucas Wiessing (EMCDDA, Portugal)
Wien Limburg (The Netherlands)
Erik Van Ameijden (The Netherlands)
Fernando Antoñanzas (Spain)
Catherine Comiskey (Ireland)
Gloria Crispino O'Connell (Ireland)
Gerald Foster (USA)
David Goldberg (United Kingdom)
Gordon Hay (United Kingdom)
Matthew Hickman (United Kingdom)
Claude Jeanrenaud (France)
Pierre Kopp (France)
Mirjam Kretzschmar (The Netherlands)
Marita Van De Laar (The Netherlands)
Harold Pollack (USA)
Thierry Poynard (France)
Lucilla Ravà (Italy)
Carla Rossi (Italy)
Gernot Tragler (Austria)
Robert Welte (The Netherlands)
Ardine De Wit (The Netherlands)

Brigitta Zuiderma-van Gerwen (The Netherlands)
John Wong (USA)