Author's response to reviews

Title: The estimated economic burden of genital herpes in the United States. An analysis using two costing approaches

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Version: 4 Date: 19 Jun 2001

We thank both Reviewers for their criticisms. Please find below a point-by-point response to the questions and concerns raised. As a consequence, we believe that the strength of our paper has been improved.

A. Answers to the comments raised by Reviewer Ken Smith:

We thank you for the very helpful comments guiding our revision. You asked us to address the following issues:

1. Sources of cost values

Thanks a lot for this valuable advice. As suggested, we now indicate clearly the sources of cost values used in the expert interview costing approach:

Values used came directly from interviews with physicians involved in the study.

2. Calculation of indirect costs

We thank both Reviewers for this excellent comment. Accordingly, we added more information and references in our methods section about the indirect cost estimates:

Indirect costs were calculated using the human capital approach. [Koopmanschap, 1993; Drummond, 1997]. These costs were based on an average U.S. hourly wage of $14 [Statistics, 1999], and were valued according to estimates of time consumed by hospitalization, time lost from work due to illness, and travel and waiting-room time resulting from physician visits. We estimated that individuals with a primary GH syndrome would miss two days of work if symptoms were not severe enough to require hospitalization, and one week of work if hospitalization was required. Patient travel and waiting room time was estimated to be two hours per physician visit. We did not use gender-specific wage rates, as females are underpaid relative to men [Statistics, 1999], so that gender specific wage-rates would implicitly undervalue the costs of GH in females.
3. Claims database approach and indirect costs

As requested, we changed the concerned sentence in the methods:

Direct medical costs were based on actual pharmacy, outpatient and hospital claims processed by DPS.

4. Duration of genital herpes episodes

We modified the discussion according to the Reviewer’s suggestion:

It must be noted that the higher figure is obtained with data collected via questionnaire and is likely to represent the monetary value of the amount of treatment prescribed by physicians. Moreover, the reported duration of primary and recurrent GH episodes in this analysis was longer than that commonly cited in the literature [Benedetti, 1994; Stanberry, 2000; Wald, 2000], and may have artificially increased the cost estimates. The lower figure, on the other hand, is an estimate based on claims and represents the minimum amount of medical care and treatment actually consumed by patients.

B. Answers to the comments by Reviewer Dorothy Rice:

We thank the Reviewer for the helpful and very constructive suggestions, as well as for the comments about the significance of our work.

1. Methods section.

We added this sentence to the concerned paragraph:

Values used came directly from interviews with physicians involved in the study.

2. Indirect cost estimates.

We thank both Reviewers for this excellent comment. Accordingly, we added more information and references in our methods section about the indirect cost estimates:

Indirect costs were calculated using the human capital approach. [Koopmanschap, 1993; Drummond, 1997]. These costs were based an average U.S. hourly wage of $14 [Statistics, 1999], and were valued according to estimates of time consumed by hospitalization, time lost from work due to illness, and travel and waiting-room time resulting from physician visits. We estimated that individuals with a primary GH syndrome would miss two days of work if symptoms were not severe enough to require hospitalization, and one week of work if hospitalization was required. Patient travel and waiting room time was estimated to be two hours per physician visit. We did not use gender-specific wage rates, as females are underpaid relative to men [Statistics, 1999], so that gender specific wage-rates would implicitly undervalue the costs of GH in females.

3. Extrapolation to the United States.
We thank the Reviewer for this comment. We describe now in the Result section in more detail how the data were extrapolated:

From the data available, the incidence of clinically manifest GH can be estimated to be 423,000 cases and the number of recurrent cases at about 698,000 patients in 1996. These estimates correspond to an occurrence rate of 3,139,000 symptomatic episodes.

4. Extrapolation of HMO and IPO data.

These calculations represent a crude extrapolation. We added this sentence to the methods to explain the method used:

The annual costs attributable to GH-infection in the United States were estimated as the product of the number of incident and prevalent infections and the average present value of the costs attributable to a single GH-infection.

In addition, we comment this issue thoroughly in our discussion section and attract the attention of the reader to the fact that there may be undersampling of certain groups in our study cohort:

Third, the health plans included in this study allowed for geographical representation on a large regional basis. However, undetected patient, provider and practice differences may still exist. Caution should therefore be exercised in generalizing to other regions not included. Finally, cases selected may not necessarily be indicative of minority, low socioeconomic status (SES), or indigent populations, since claims data can only provide data on those individuals who access the system. Therefore, the demographics of the database, in combination with the use of neighborhood clinics for GH treatment, make our calculated GH rates and costs lower bound estimates of the true GH prevalence and associated costs in the USA.

5. Numbers in the Tables.

We used the mentioned epidemiological data to calculate the numbers in Table 5, as described now in the methods.

6. Table 2.

We agree that the last 3 digits should be dropped to avoid the appearance of preciseness. We modified the table accordingly.

7. Table 3.

We thank the Reviewer for the careful reading of this table and modified the last column of Table 3 according to the comments by the Reviewer.

8. Table 4.
As suggested, we aligned the headings with the columns in Table 4.

9. Table 5.

As requested, we rounded the results in the last column and expressed data in million US dollars. We did not insert a line showing the grand total, since the columns # 2-4 do not simply add up.