Author's response to reviews

Title: Analysis of timeliness of infectious disease reporting in the Netherlands

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Author's response to reviews: see over
Response letter to the reviewers and Editorial Board of
BMC Public Health

Zaandam, February 3, 2011

Dear Editor,

Please find enclosed our revised manuscript entitled: “Analysis of timeliness of infectious
disease reporting in the Netherlands”. (MS: 1315854460475895)

We thank you for giving us the opportunity to clarify and improve some parts in the
manuscript.
We are very pleased with the constructive comments of the reviewers and their final
judgement that our manuscript on timeliness can be a helpful contribution to improve
effectiveness of surveillance.
We agree with most of the comments and have adjusted and improved the text accordingly.
A native English speaking investigator was helpful with rearranging and editing of the text.
We hope to have clarified all inconsistencies and incomprehensible text fragments.

Associate Editor’s comments and Editorial Requests:

1. The data of the RIVM were not openly available. Every MHS can see, obtain and
download their own aggregated data but they are not allowed to see notifications from
other regions. The reports of notified cases from the MHS to the RIVM are done
without patient identifiers (anonymous). Every MHS sends these anonymous
notifications (from their own region) overnight by a web based application to the
RIVM.
2. Regarding the request for (preliminary) data on the further investigation on the
intervals we regret to say that in this phase of the study we can not give all relevant
data but we have added some text (clarifying table 3) to partly meet the request.
3. We thank the reviewers for the remarks with regard to textual improvements and
labels, and have incorporated practically all suggestions.

Please find our detailed reaction in the following pages. We hope that with these changes and
additions the manuscript is suited for publication in your journal.

Kind Regards,

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Referee 1
Reviewer: Trang Q Nguyen

Major compulsory revisions:

The reason for comparing notification periods to one incubation period seems obvious but why compare the periods to two incubation periods?

4. We used two incubation periods because within two incubation periods there are still possibilities to break “the chain of transmission”; it may not prevent the occurrence of secondary cases but it may prevent the occurrence of tertiary cases. In general an outbreak is considered over when no further cases develop within two incubation times. Two incubation periods were also used in literature as proxy for timeliness; so we wanted to compare our data. You were right to mention that we did not clarify this in the manuscript. We have added our arguments in the text.

What were MHS respondents asked if they were interviewed further by telephone?

5. The respondents were asked the number of reports they were receiving by electronic-mail, the speed of notification and the use of a secure in house mail system. We added these questions in the text of the manuscript. We agree; these were missing items.

Particularly as the surveillance system on gastroenteritis and food-poisoning has raised concerns” is a sentence fragment and needs to be clarified. Why are the concerns about this surveillance system important in relation to the timeliness of reporting?

6. The concerns about the surveillance system on gastroenteritis are the fact that many cases were reported after delay in accordance with our data.

What is the total number of reports available for each disease for analysis?

• If a substantial number of reports were missing data elements so that P0 and Pd could not be analyzed, then the number of reports not included in analyses should be addressed in the manuscript.

7. We also added the total numbers of reports available because these were missing. You are right; this can be of importance in interpreting the data. Some reports were lacking data, so had to be excluded.

Minor essential revisions:

8. We have removed and merged sentences as suggested and removed the mentioning of “Osiris”, although it is not a product on the market, but it is not of any surplus value to the manuscript. We thank you for all the useful suggestions.

Discretionary revisions:

9. We incorporated these revisions in the text.
Referee 2  
Reviewer: Hyo-Soon Yoo  

Major compulsory revisions

The authors created Po, Pd, Ic as main indicators to assess timeliness. Even though these are key measures of this paper, but not fully discussed. The authors should clearly note the implications of these key indicators in its public health perspectives.

10. We have tried to clarify more comprehensively our chosen intervals as important key measures in evaluating timeliness of reporting. We added text fragments to clarify in the discussion the implications per disease. We hope the added sentences (in the background an discussion parts) improve the concept and impact of those intervals.

Pd is an important period because it is the only time modifiable by physicians or laboratories. But it is not clear because

A. For T2 and Pd, the authors defined T2 as the time laboratory diagnosis made, and Pd as the time interval between laboratory diagnosis made and MHS receives notification.
B. However, as the authors mentioned, T2 for measles is not made by laboratory diagnosis (most of them are made by epidemiological diagnosis without laboratory diagnosis), and the other diseases also have cases of clinical diagnosis (although they fractions are negligible). Thus, T2 actually reflects the time of any diagnosis both of the clinically only and/or with laboratory results. Moreover, if laboratory test makes time delays, Po-Pd (from T0 to T2), not Pd would be shortened because T2 is the time laboratory diagnosis made (not the time laboratory test referred). For this reason, median Pd would be underestimated in this paper.

11. We agree that the interval Pd is important, as it can be influenced by physicians or laboratories. However it is not the only interval which is modifiable. Also patient delay and physician delay can be influenced by raising alertness. In the Netherlands we saw an increase in timeliness of reporting cases during an outbreak; patients searched medical care and physicians requested laboratory testing at an early stage of the disease.

12. T2 for measles: This is true, a proportion of measles cases is based on the clinical diagnosis. But these “epidemiological cases” do rely on a laboratory confirmed diagnosis of the index patient. We performed an analysis by excluding all the epidemiological cases for all diseases to see the difference in Po and Pd. Only for measles the Po was different (larger time interval) without these cases. The criteria for reporting cases include the laboratory confirmed diagnosis. So we decided to define the T2 as diagnosis on the base of laboratory confirmation and added in the discussion the limitation for measles cases.

In Table 2, (Mean Po and Pd by year for shigellosis and HAV infection)

A. Please make clear the reason to use ‘mean’ instead of ‘median’ that the authors has been used to assess timeliness in table 1.

13. We used the single variance analysis (One-Way ANOVA) , with post hoc Bonferroni analysis. This test is about the differences between more than two groups. So we did not use the T-test for the comparison of the years 2003 till 2008. This test uses the means of more than 2 groups. Our aim was to see if there was an improvement in time of reporting over the years.
Table 2. There is not enough discussion about this table. It also showed the reverse result against the authors assumption that when Pd is shortened (for example, by direct laboratory reporting), Po would also be shortened. But Po was constant or even lengthened while Pd was shortened by year in this table. Please, add some discussion of the result ‘Pd was getting shortened, but Po remained constant by year.’

14. We discussed this part with an researcher of the SPSS program and added our assumptions in the discussion. We think that just one day mathematically is not enough to make an important difference in the means of Po (being a larger interval than Pd) for these diseases. The difference between years fluctuated naturally and the Po was not really lengthened. Of course the means are more influenced by outliers. The difference in Pd for HAV infections is not statistically significant. We think the statistically significant improvement in the Pd for shigellosis is also due to the large number of notifications.

Generally, tables are too complicated. The authors should modify tables with sub groups and horizontal rules that categorize groups and delete redundant information. eg.

15. We modified the tables to clarify the data.

Minor Essential Revisions:

Methods, 8th paragraph, 2nd sentence. “For all six diseases, physicians are obliged by law to notify MHS on working day after laboratory diagnosis or a maximum of three days, if a weekend intervenes”, is redundant with Background, 3rd paragraph.

16. The information is indeed unnecessarily repeated and therefore removed.

17. We checked the errors and corrected them. We also put in the right new link to the website of the RIVM with the guidelines as used in the Netherlands.

18. Table 3: we split the table and reformatted it. We also added new labels and more information about the tables in the manuscript.