Reviewer's report

Title: Completeness and timeliness of Salmonella notifications in Ireland in 2008: a cross sectional study

Version: 1 Date: 18 May 2010

Reviewer: Lisa King

Reviewer's report:

Major compulsory revisions
None

Minor essential revisions

Abstract
- Background
The authors should clarify what cases are electronically reported: clinical and laboratory confirmed or only laboratory confirmed.
The last sentence of this section is not relevant for the introduction. It is a discussion point.
- Methods
The authors need to add a sentence which describes how they did these evaluations (crossing CIDR with the NSRL data base). It is currently not clear in the abstract.
- Results
The authors need to define “days” and “IQ” in the text before using the abbreviations.
The “median total identification time” described in this section does not correspond to the definition cited in the methods section of the article. This point is addressed further on in the comments.
- Conclusions
An “s” is missing from the word “professional” in the first line.
Why do the authors single out “ethnicity” among other important variables (eg date of symptom onset and country of infection) as a non-mandatory variable that health professionals should be educated about? Yes, it is the least complete, but is it more important than the other variables non-sufficiently completed?

Who or what is “public health” or “PH”. The HPSC? The DPH? This needs to be clarified throughout the text of this article.

Introduction
- First paragraph: were the 22 outbreaks detected in 2008? This needs to be
clarified. How many of these outbreaks were detected by the system (the authors state in the abstract that the system is not timely enough to detect outbreaks).

Materials and Methods
- It is necessary to define the surveillance case definitions for the reader. We note “confirmed cases” in the methods section (paragraph 5). Are a laboratory and a clinical notification necessary to define a confirmed case? The second last line of the discussion on page 13 talks about notification of “probable cases”. What is a “probable” case?
- Paragraph 1: CIDR was implemented in “16 primary laboratories in hospitals”. Out of how many? Are there any community laboratories in Ireland? Or do primary laboratories in hospitals analyse all stool specimens. The reader is looking for an idea of the coverage of this system and the population from whom these data are generated.
- Paragraph 1: Clinical notifications are registered by the DPH. Are these non-laboratory confirmed clinical cases? From Figure 1 the reader understands that they are clinical suspicions of salmonella for which a sample has been taken but not yet processed. Or do clinicians report laboratory data feedback from primary laboratories? If so, this is not marked in figure 1. This needs to be clarified in the text and figure 1.
- How does the DPH match these clinical notifications with the laboratory notification and de-duplicate the system. Is there a unique identifier based on demographic characteristics that allows clinical and laboratory notifications to be linked as well as the link to NSRL data to be made. This should be clarified in the text.
- How do clinicians notify the DPH of clinical/confirmed(?) cases? A standardised notification form?
- Last line of paragraph 1: how many “primary laboratories” do not have CIDR already in use? Are these again primary laboratories in hospitals or also in the community? This needs to be clarified.
- What information do primary laboratories enter? Information only to species level? Is the NSRL the only laboratory carrying out further typing of isolates?
- An “a” is missing from the second line of the paragraph “notifications flow”.
- A general comment on the 5 calculated time intervals: certain intervals (numbers 2 and 3) are defined with inclusion in the text of the necessary component intervals e.g. “it encompasses interval 2, interval 3 and interval 4”. This is helpful for the reader. However, this is not done for Intervals number 1, 4 and 5. It would be helpful for the reader if the components of those time intervals were added.
- The first sentence on page 8 contains a typo (“to DPH” and “to the DPH”)

Results
Paragraph 1:
- Before comparing the 449 cases of the CIDR database with the NSRL database
it would be helpful to know how many of those 449 cases were clinical or primary laboratory notifications, especially as the authors conclude that laboratory notifications are faster than clinical ones. How many cases of the 449 had both clinical and lab (not NSRL) data. How many are outbreak associated? The reviewer again thinks of case definitions (confirmed vs probable case as noted in the text) which are not provided here.

Paragraph 3:
- The interval name has been changed since the methods section: the word “collection” is missing after “sample”.
- The IQs given in the text: (4-7d) are different than those given in table 2 (0-7d)

Paragraph 4, 5 and 6:
- Why do the authors not present the key intervals that they defined in the methods section? Instead of presenting the actual interval they present just the components of that interval. I am assuming that because of missing values, the reader cannot simply sum up the component elements to get the total interval value.

Paragraph 6:
- Last sentence of page 9 has a typo “..are received to NSRL”

Paragraph 8:
- The total interval (interval number 4) defined in the methods section (page 7) does not correspond to the interval result presented on page 10 (paragraph 2) :
Methods section: total interval = from date of onset illness to forwarding of NSRL results by primary laboratory to DPH
Results section: total identification time interval = from date of specimen collection and availability of NSRL results on CIDR
The total identification time interval is presented in the abstract.

Paragraph 9:
- There is a typo in this sentence “..in notify.”
- Line 8: In the results section, the authors state that clinicians were more prompt in notifying cases than laboratories. Table 3 supports this result. However, in the abstract results section (line 5), the opposite result is presented (laboratories faster than clinicians). Error?
-Line 9: the authors say that such a comparison is confounded as laboratories non-live on CIDR notify their cases clinically. This clinical-laboratory “mixing” of notifications is not clear from reading the methods section (page 5 paragraph 2 line 8). How many labs not live on CIDR declare in this way and how many of the 449 cases in 2008 did they declare? Does this occur to a degree that would invalidate the comparison of notification types?

Paragraph 10:
- The timeliness by serotype analysis was not described in the methods section.
It needs to be added.
- As done with other intervals, the authors need to define “interval for full identification at the NSRL”.

Paragraph 11:
- The last sentence has a typo “Dues..”

Discussion

Paragraph 2:
- The first 2 sentences of this paragraph repeat directly the results data and should be removed or reformulated.

- Among the explanations of CIDR records without NSRL dataset, the authors propose that some isolates may have been incorrectly classified as Salmonella. Who incorrectly classified the sample? The primary laboratory? If this is the case, why was the case left in the CIDR salmonella database?

Paragraph 3 line 7:
an “s” is missing from “measure” in this sentence

Paragraph 4 line 3:
what does the 58% refer to?

Paragraph 4 line 7:
How many laboratories are not live on CIDR? The authors do not give information on the coverage of their surveillance data. What proportion of laboratories in the countries potentially identifying Salmonella are using CIDR (either directly or indirectly through the DPH)?

Paragraph 5:
- According to table 2 this delay (interval 4) is 4 days and not 6 as stated in the text.
- There is a typo in line 3: an “s” is missing from “term”

Paragraph 6:
- In line 9, use of the term “through CIDR” here confuses the reader. In figure 1, the NSRL forwards results data to the primary lab but it is not shown that this is done via the CIDR system. This is additionally not clearly described in the methods section.
- In line 10:
In table 2, the delay of interval 6 is the longest but the delay of interval 7 at 4 days is shorter than several other delays of 5 and 6 days.

Why is 4 days considered “markedly extended” as is stated in the conclusion. Are laboratories requested to notify NSRL results to CIDR in real-time?
- In line 11: what does “reviewing typing information” mean? Feedback to primary labs? Data transfer to CIDR and the DPH?

Paragraph 7:
- line 1-2: It would be helpful to the reader to provide the delays of the other surveillance systems for comparison.
- line 4 and 5: “laboratory” should be “laboratories”
- What does the last sentence mean? This sentence appears redundant considering the second sentence of the paragraph.

Paragraph 8
- The authors need to add the limitation that laboratories not live on CIDR notify cases clinically by the DPH (could be moved from the results section on page 10).

Conclusions
- Line 1: the word “as” is missing from the end of the line.

Figure 1:
- The figure title talks of “confirmed cases” however the figure suggests that clinical notifications are made upon sample collection and thus without feedback of primary laboratory results.

Table 2:
- In the title, the interquartile interval (IQ) is defined but in the table the IQR is noted.
- A column with N values should be given for the calculated intervals.

Discretionary revisions

Abstract
The last sentence of the abstract conclusions is not pertinent to the evaluation presented as it not based on any of the results in the manuscript.

Introduction
- It is strange to find a paragraph describing the evaluation of a surveillance system between the paragraphs describing the objectives of the system and the system itself. This paragraph would be better moved before the last sentence.

Materials and Methods
- The authors should define the variables used in the analyses. Outcome: death or cured or cured with sequela? Patient type= inpatient, outpatient, community sample?

Results
- Paragraph 4: The interval definition, which is defined in the methods section, unnecessarily repeated here.

Paragraph 6:
- The first sentence is a discussion point and not a result and should be moved from this section.
Paragraph 9:
The last sentence of this paragraph is interpretation and should thus be in the discussion section.

Discussion
Paragraph 5:
- In line 12 it would be clearer to reformulate “primarily laboratory notifications” as “initially reported by laboratories”.

Paragraph 6:
- Line 10: here it would be useful to cite the actual delay of 9.5 days.

Conclusions
- Do the authors plan to extend this partial evaluation of the surveillance system to include other elements of an evaluation such as sensitivity, acceptability and positive predictive value? This would be an interesting continuation of this work to propose in the paper.

Figure 1:
- The lines styles differentiating “Source laboratory notification flow” and “Reference laboratory flow” are very similar and not easy to distinguish.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests