

Abstract to review

The 4-hour investigation: E.coli contaminated water source following typhoon Haiyan, Philippines, November-December 2013

Background:

On December 14 2013, a health centre in Leyte Province, Philippines notified the World Health Organization of 5 individuals from the same village with diarrhoea and fever, with rumours of more sick villagers since typhoon Haiyan (November 8). Due to no road access, cost and logistics, only one visit, by air, was possible. On December 19 we investigated to confirm the cluster, find the source, treat symptomatic individuals and implement control measures.

Methods:

The team of epidemiologists, water/sanitation specialists, clinicians and logisticians, pre-planned questionnaires and analysis and stockpiled treatment and water purification. Upon 10.00 arrival, we enumerated and interviewed villagers; treated and swabbed symptomatic individuals; inspected and tested water sources. A case was a villager with minimum 3 loose stools in 24 hours after November 8. We described the cluster in time, place and person. We compared cases with controls in terms of risk factors and calculated odds ratios (OR) with 95% confidence intervals (95%CI). We implemented control measures based on our findings. We were airlifted at 14.00.

Results:

Among 350 individuals in 56 households, we identified 35 cases and one death. Median case age was 2 (range 0-49). Median symptom duration was 2.5 days (range 1-30). Cases occurred between November 9-December 18, with 7 still symptomatic. 20 cases (57%) occurred within ten days post-typhoon. Compared with 9 controls, the 17 cases were less likely to use soap (OR 0.09, 95% CI 0.01-0.79). Rectal swabs were negative. The typhoon destroyed the main water pipe and instead villagers used a spring located underneath latrines and grazing areas. Water specimens were positive for E.coli. Each household received a water container with purification solution.

Conclusion:

An E.coli contaminated spring was the most likely source. Strict time management, clearly assigned roles, strong logistical support, and pre-planned data collection and analysis, enabled rapid investigation and intervention. We recommended fixing the water pipe.

Solution

This is the first draft of an abstract prepared for the ESCAIDE conference. While already very good, the abstract can benefit from improvement if one reviews it using the checklist. See below the review and the following re-write that led to an acceptance for an oral presentation at the ESCAIDE conference, 2014.

Checking the abstract for the 20 tips provides the following results:

a. Use the different sections for the argumentation

1. **TITLE:** Emphasize results (and among results, the new ones) and specify the time and place.

-> *The title only mentions the contaminated water source and not the cluster itself.*

2. **INTRODUCTION:** Focus within two-sentences to address (a) the rationale and (b) the objective(s).

-> *Could be shorter and more to the point, in two sentences.*

3. **METHODS:** Describe methods used, including data analysis, so that the reader understands how the objectives were addressed. The indicators that were calculated are more important than the software that was used.

-> *The authors could focus on the investigation methods that will address the objectives rather than the interventions that should be part of the last paragraph (action taken).*

4. **RESULTS:** Maximize the presentation of facts, data and indicators. Include denominators for rates and proportions calculated. Mention proportion exposed or proportion affected. Specify measures of associations and confidence intervals.

5. **CONCLUSION:** Interpret results beyond simple repetitions, paraphrase or claims that the study is the best ever done. Make sure all results are contained in the results section and that all elements in the conclusion build upon results presented in the previous section to integrate pieces of evidence that bring an answer to the objectives.

-> *The conclusion is not consistent with the results that pointed to hygienic factors. According to the results of the case control study, the spring alone cannot explain the entire outbreak.*

-> *The middle sentence (Strict time management, clearly assigned roles, strong logistical support, and pre-planned data collection and analysis, enabled rapid investigation and intervention.) is unnecessary self-praise. Simply document what was done and let the reader decide how to judge the effectiveness and efficiency of your response.*

6. **RECOMMENDATIONS:** Base recommendations / next steps on the conclusions. Formulate recommendations strictly based upon the conclusion statement (of the abstract) that was generated on the basis of the results (presented in the abstract).

-> *The actions taken explained in the methods belong to this section.*

7. **TECHNICAL REFERENCE:** The abstracts documents that the work is in conformity with the recommended methodological approach for the type of project (e.g., Documents all the key steps of an outbreak investigation).

-> *The outbreak documents all steps of an outbreak investigation (while unfortunately the rectal swab did not grow). The authors could have however described better the clinical picture that would have allowed narrowing down on a few possible pathogens.*

8. **SELF-CONTAINED ABSTRACT:** Knit the abstract together logically and consistently, section by section, so that it stands alone with no reference to external information, reference or figures. Everything must be needed and consistent in an inter-related way.

-> *The abstract is mostly self-contained with minor exception (The methods say they described the cluster by time, place and person, but the results do not describe the spatial distribution).*

b. Data presentation

9. **Rounding up.** Round up measures of associations and their CIs to two meaningful digits (e.g., 240, 24, 2.4, 0.24). Note that for three digits odds ratio, this involves rounding up (567 becomes 570). Remove decimals to round up percentages.

c. Writing style: The seven 'S'

10. **Simplicity:** Use simple words and concepts, avoiding jargon and labels.

11. **Specificity:** Maximize the quantity and precision of information. Prefer quantifications to qualifications.

12. **Sequentiality:** Use a temporal, geographical or logical sequence to tell the story from the beginning to the end, from the global to the local and from the general to the specific.

-> *A sequential distribution of the epidemic curve will be clearer and shorter:*

- *Cases occurred between November 9-December 18, with 7 still symptomatic. 20 cases (57%) occurred within ten days post-typhoon.->*
- *Cases started occurring on 9 November, peaked on 11 November, decreased, and peaked again on 12 December, with 7 symptomatic when we visited.*

13. **Short:** Write concisely: Say it once, say it well and say it at the right place.

14. **Strong:** Maximize the use of verbs to convey meaning. The verbs are the centres of gravity of the sentences.

-> *The use of 'was' as a verb can be omitted:*

- *Among 350 individuals in 56 households, we identified 35 cases and one death. Median case age was 2 (range 0-49). Median symptom duration was 2.5 days (range 1-30).->*
- *Among 350 individuals in 56 households, we identified 35 cases and one death (Median case age: 2 (range 0-49); Median symptom duration: 2.5 days, range 1-30).*

15. **Systematic:** Use the right words, and do so consistently when referring to the same thing. Make sure you use terms like 'significant', 'match', 'correlate' etc... as per their accepted usage in epidemiology and statistics. Differentiate the pathogen from the infection and the infection from the disease.

16. **Structured.** Structure (or not) the abstract as per the recommendations of the journal / conference. Most recommend structured abstracts. However, some do recommend unstructured abstracts.

d. Grammar

17. **Prefer active voice.** Use active voice throughout as it reads more natural, light and pleasant. Consider the passive voice only if the subject is obvious or un-important.

18. **Select tenses appropriately.** Use the past to report results and the present for established facts.

e. Abstract guidelines

19. **Word count.** Stick to the word limit as excessive word count will mean refusal.

20. Check spelling and proof read.

Edited abstract, as published in the ESCAIDE 2014 abstract book

Cluster of diarrhea following typhoon Haiyan, Philippines, November-December 2013: A four-hour investigation

Background:

On 14 December 2013, a health centre in Leyte Province, Philippines, reported five febrile diarrhea cases from one remote village; more villagers had allegedly become sick since typhoon Haiyan (8 November). On 19 December, the Philippine Army airlifted us in the village to identify the source, treat symptomatic individuals and implement control measures.

Methods:

Epidemiologists, water/sanitation specialists, clinicians and logisticians prepared questionnaires, analysis plans and supplies (medication, water purification tablets) in advance. Upon 10h00 arrival, we enumerated and interviewed villagers, collected rectal swabs from symptomatic individuals, inspected and tested water sources for pathogens. We described cases (villagers with ≥ 3 loose stools/day after 8 November) by time and person and compared cases with controls in terms of exposures through odds ratios (OR) and 95% confidence intervals (95%CI).

Results:

Among 350 individuals in 56 households, we identified 35 cases (median age: 2, range 0-49; median symptom duration: 2.5 days, range 1-30) and one death. 3 cases had bloody diarrhea. Cases started occurring on 9 November, peaked on 11 November, decreased, and peaked again on 12 December, with 7 symptomatic when we visited. Compared with 9 controls, 17 cases were less likely to use soap (OR 0.09, 95% CI 0.01- 0.79). The typhoon destroyed the main water pipe, forcing all villagers to use a spring located underneath latrines and grazing areas. No pathogens were isolated from rectal swabs. Water specimens grew *E.coli*>100 MPN/100ml.

Conclusions:

A contaminated spring likely caused this post-disaster cluster, which may have been further propagated by poor hygiene. We treated symptomatic cases, distributed water containers and purification solution to all households, and departed at 14h00. Following our recommendations, the pipe was repaired. No further cases were reported.