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Correlation of web-based query and outbreak of emerging infectious diseases

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Citation

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Review question(s)

The aim of this study is to systematically evaluate the correlation and accuracy of web-based query and outbreak of emerging infectious diseases.

Searches

We searched nine electronic databases including PubMed, Virtual Health Library (VHL), WHO Global Health Library (GHL), Scopus, ISI, Google Scholar, POPLINE, and Systems for Information of Grey Literature in Europe (SIGLE), New York Academy of Medicine (NYAM Grey Literature Report), to identify relevant articles.

The full search strategy can be found in the accompanying PDF document (link below)

Link to search strategy

http://www.crd.york.ac.uk/PROSPEROFILES/38104_STRATEGY_20160321.pdf

Types of study to be included

Original articles are included.

Condition or domain being studied

Infectious diseases

Participants/ population

Inclusion criteria:

1-Original articles reporting correlation of the web search query and number or prediction of cases in infectious diseases outbreak.

2-Articles reporting the correlation coefficient values such as R2, Pearson or Spearman's coefficient

3-No restrictions regarding publication date, language or area where research was conducted.

3-Articles conducted in human patients.

Exclusion criteria:

1-Not an infectious disease outbreak.

2-Conducted in animals or in vitro.

3-Unreliably extracted data.

4-Overlapped data sets.

5-Abstract-only articles (conference, letters, commentaries), or thesis, or books.

6-No full-text available.

Intervention(s), exposure(s)
Original studies that report using of web-based query to predict or correlate the case number of an infectious disease outbreak.

Comparator(s)/ control
When there are control groups, the comparison will be computed.

Context
Studies are excluded if it (i) is not an infectious disease outbreak; (ii) were conducted in animals or in vitro; (iii) unreliably extracted data; (iv) overlapped data sets; (v) Abstract-only articles (conference, letters, commentaries), or thesis, or books; (vi) no full-text available.

Outcome(s)
Primary outcomes

- The correlation between web-based query and the case number of an infectious disease outbreak

- The accuracy (sensitivity and specificity) of web-based query and the predicted case number of an infectious disease outbreak

Secondary outcomes

- Explore the time (days, weeks, months) the web-based query trend can predict the outbreak before the government/official report.

Data extraction, (selection and coding)
Data will be extracted by two independent authors and checked by another reviewer. Disagreement will be resolved by discussion and consensus. A standardized form will be used to extract data from the included studies.

Risk of bias (quality) assessment
The quality of included studies will be assessed by two independent reviewers using Pai et al and NOS tools. The sensitivity, meta-regression and subgroup analyses will be conducted to study the effect of each covariate on the pooled results.

Strategy for data synthesis
Descriptive statistics and meta-analysis will be done for all included studies.

Analysis of subgroups or subsets
Subgroup analysis will be carried out to find the possible source of the heterogeneity and resolve it.

Dissemination plans
The study will be disseminated in a peer reviewed journal.

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Stage of review
Ongoing

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Stage of review at time of this submission	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No