

INPLASY

Integrated serosurveillance of infectious diseases using multiplex bead assays: A systematic review

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ADMINISTRATIVE INFORMATION

Support - Nil.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202440094

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 April 2024 and was last updated on 23 April 2024.

INTRODUCTION

Review question / Objective What are the geographic distribution and temporal trends over time of MBA utilization in integrated serosurveillance for infectious diseases, and how is it operationally implemented, with specific focus on sample collection methods, analysis timeframes, and the range of infectious diseases studied?

Condition being studied Neglected tropical diseases, vaccine preventable diseases, mosquito-borne diseases, and blood-borne viruses.

METHODS

Search strategy An electronic MeSH search strategy will be used to identify all relevant articles without publication date restriction from the following databases: Pubmed, Medline, Scopus, Embase, and Cochrane.

Participant or population All human participants, regardless of age or gender. No geographic restrictions.

Intervention Serosurveillance of infectious diseases using Multiplex Bead Assays.

Comparator Nil.

Study designs to be included All observational and intervention studies utilising multiplex bead assay technique for surveillance of more than one infectious disease concurrently.

Eligibility criteria Study type: All observational and intervention studies utilising multiplex bead assay technique for surveillance of more than one disease concurrently. Study published in English.

Information sources An electronic MeSH search strategy will be used to identify all relevant articles without publication date restriction from the

following databases: Pubmed, Medline, Scopus, Embase, and Cochrane.

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Main outcome(s) In what countries are MBA used for integrated serosurveillance of infectious diseases?

From an operational perspective, how is integrated serosurveillance using MBA being conducted?

What infectious diseases are included under integrated surveillance using MBA?

Additional outcome(s) What sampling method was used to collect samples and determine seroprevalence? What was the prevalence estimated to be and how does it vary across country, time, age-groups and gender?

Which countries have used MBA based integrated serosurveillance on more than one occasion over time?

How are the samples taken (eg dried blood spot, serum bloods)? How long after the samples are taken until they are analysed using MBA?

In what country was the sample analysis conducted using MBA?

What were the practical implications of the serosurveillance findings for public health interventions and policy development?

Quality assessment / Risk of bias analysis STROBE checklist.

Strategy of data synthesis Data will be collated into a tabular format. A narrative description of the data extracted from the studies will be conducted. This review will be written in concordance with the PRISMA checklist for systematic reviews.

Subgroup analysis By age group (pediatric (under 18 years) vs adult), and gender.

Sensitivity analysis Nil.

Language restriction English.

Country(ies) involved Australia.

Keywords serosurveillance, neglected tropical diseases, vaccine preventable diseases, integrated surveillance.

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