

Good diagnostic accuracy of dried blood spots as compared to blood: DBS may be an acceptable specimen for some surveillance activities.

Systematic review of diagnostic accuracy of dried blood spots for diagnosis and seroprevalence of vaccine-preventable diseases

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INTRO

- Dried blood spots (DBS) can potentially be a feasible alternative to venous blood in low-resource settings, provided these assays can achieve adequate sensitivity and specificity.
- We undertook a systematic review to determine the validity and reliability of dried blood spot specimens in measuring IgG and IgM antibodies to vaccine-preventable diseases in humans.

METHODS

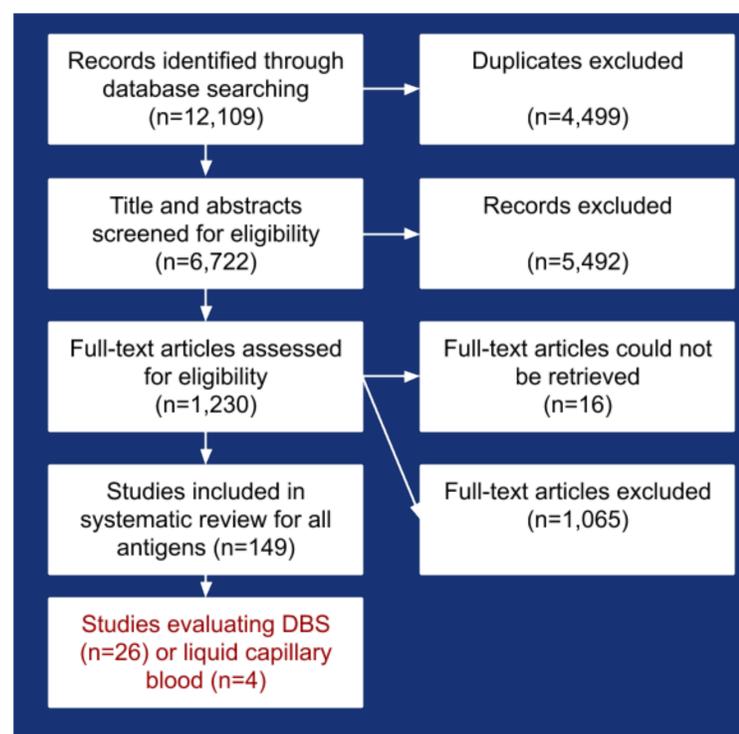
- **Inclusion criteria:** studies testing for IgG or IgM antibodies to measles or rubella using dried blood spots for index test and blood for reference test
- We identified whether studies reported practical aspects in evaluating the use of dried blood spots, including collection, transportation, storage, and processing procedures

RESULTS

- We identified 26 studies that evaluated DBS and 4 studies that evaluated liquid capillary blood against a recognized reference specimen for a vaccine-preventable disease
- Good performance of DBS compared with serum in the detection of IgM and IgG antibodies for different VPDs
- Wide variation in reporting from studies reporting the measurement of IgM and/or IgG antibodies against different VPDs

DISCUSSION

- Sparsity of data and variability in methods limits inferences
- The number of studies concerning dried blood spots identified in our review may not accurately reflect the existing number of studies actually using DBS in different settings
- The frequent usage of dried blood spots may have precluded researchers from conducting additional validation studies



Sensitivity and specificity for IgM and IgG antibodies against vaccine-preventable diseases in DBS

