

RISK-BASED SCREENING TOOLS TO OPTIMIZE HIV TESTING SERVICES: A SYSTEMATIC REVIEW

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Background:

Effective ways to diagnose people living with HIV unaware of their serostatus is an urgent global priority. This study aims to evaluate the use of risk-based tools--a set of criteria to either identify high-risk individuals for HIV testing who would not otherwise be offered a test ("screen in") or exclude people from a routine offer of a test ("screen out").

Methods:

The study was in two parts: (1) systematic literature review and (2) global survey of implementers. We searched four databases in July 2020 and assessed the accuracy of screening tools in diagnosing HIV (using AUC: area under a receiver operating characteristic curve). The systematic review protocol is registered in PROSPERO (CRD42020187838). We invited 68 implementers to complete a survey of their experiences using these tools within programmes.

Results:

We identified 18,238 citations, and 71 were included in the final analysis. Tools were used in high-income (51%) and low HIV (<5%) prevalence countries (73%). Tools were most commonly used in primary care settings (24%), for men who have sex with men (MSM, 21%) and paediatric populations (20%). The majority were for "screening in" (90%, 64/71), with the highest performance tools related to identifying MSM with acute HIV (AUC 0.85-0.89). Data from implementers revealed that tools were used in middle-income countries (68%), from high HIV prevalence countries (68%) and hospitals (36%). Tools were typically not evaluated (57%), and were used to screen in (20/80, 25%), screen out (7/80, 9%) or unknown (53/80, 66%).

Conclusion:

There is potential for risk-based screening tools to improve the allocative efficiency of HIV testing services. Highly sensitive tools might help screen in those who might otherwise be missed (in low HIV prevalence settings) but tools must be locally evaluated for accuracy and feasibility of implementation, as well as actively monitored and regularly re-validated.

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