



Medical and Health Professional Education  
Best Evidence Medical Education

## BEME Spotlight 43

### A BEME (Best Evidence in Medical Education) review of the use of workplace-based assessment in identifying and remediating underperformance among postgraduate medical trainees: BEME Guide No 43

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#### Review citation

Barrett A, Galvin R, Steinert Y, Scherpbier A, O'Shaughnessy A, Horgan M, Horsley T (2016) A BEME (Best Evidence in Medical Education) review of the use of workplace-based assessment in identifying and remediating underperformance among postgraduate medical trainees: BEME Guide No. 43 *Medical Teacher* 38.12 (doi/full/10.1080/0142159X.2016.1215413)

#### Review website

<http://bemecollaboration.org/Published+Reviews/BEME+Guide+No+43/>

#### Keywords

Workplace-based assessment; postgraduate medical education; underperformance; remediation

#### Headline conclusions

The extent to which WBA can be used to detect and manage underperformance among postgraduate medical trainees is unclear although individual WBA events may highlight specific areas for improvement. Evidence to date suggests that multi-rater assessments (i.e. MSF) may be of more use than single-rater judgments (e.g. mini-clinical evaluation exercise) in identifying generalised underperformance.

#### Background and context

Progression to competence in postgraduate medical education is complex and the demand for better accountability in the assessment of performance standards and ensuring patient safety and quality of care continues to grow. The extent to which workplace-based assessment (WBA) can be used as a facilitator of change among trainee doctors has not been established; this is particularly important in the case of underperforming trainees. The aim of this review was to examine the use of WBA in identifying and remediating performance among this cohort.

## Review objectives

This review aimed to comprehensively review the existing WBA literature to answer two overarching research questions:

1. How has WBA been used to identify and/or remediate underperforming postgraduate medical trainees?
2. What features or implementation conditions of WBA tools specifically contribute to identifying or remediating underperformance among postgraduate medical trainees?

## Review methodology

**Search Strategy:** We developed an initial search strategy (MEDLINE) which was subsequently adapted to seven additional databases: CINAHL, Science Direct, PsycInfo, Australian Education Index, British Education Index, ERIC and EMBASE (1995-September 2015). We also hand-searched the Cochrane database of systematic reviews, BEME published reviews and medical education conference (AMEE and ASME) abstracts, along with relevant medical education journals.

**Inclusion and Exclusion Criteria:** We included all studies that described or reported primary outcome data related to the use of workplace-based assessment in the identification and/or remediation of underperformance. All study designs were included. Educational outcomes were categorized using Kirkpatrick's hierarchical framework of educational outcomes (Barr et al, 2000) with adaptations by Steinert et al (2006).

**Data Extraction:** Initial screening was performed by the lead reviewer and quality-checked by a second author (99.04% agreement; weighted kappa = 0.641). Included studies were reviewed and agreed to by all study authors to consensus. Data extraction and coding was performed independently by two reviewers. Implementation mechanisms, methodological quality and educational outcomes were extracted along with trainee-level (e.g. progression), practice-level (e.g. new tool evaluation) and system-level outcomes (e.g. deanery-wide adoption or implementation of a WBA tool).

**Data Synthesis:** WBA implementation contexts - including routine vs targeted use of WBA, single vs multiple WBA events - were used to guide the narrative synthesis approach employed. Given the degree of variability with study design, methods and purposes across studies we summarized results descriptively.

## Implications for practice

1. Evidence for the use of WBA in detecting underperformance is limited, due in part to varied implementation processes, lack of ongoing longitudinal formative assessment and heterogeneity in study designs
2. Single-event WBA processes provide limited information on overall performance, but may assist in identifying specific areas for improvement e.g. in specific technical skills
3. Multisource feedback, in which overall performance over time is evaluated by multiple raters, may provide better indication of general performance than single-episode, single-rater WBA tools
4. Evidence for the influence of WBA on remediating performance among underperforming trainees has not yet been established

## References

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Steinert, Y., K. Mann, A. Centeno, D. Dolmans, J. Spencer, M. Gelula and D. Prideaux (2006). A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Medical Teacher* 28(6): 497-526