



Medical and Health Professional Education  
Best Evidence Medical Education

## **BEME Spotlight 24**

**A systematic review of the relationship between patient mix and learning in work-based clinical settings. A BEME systematic review: BEME Guide No. 24**

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### **Review citation**

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### **Review website**

<http://bemecollaboration.org/Published+Reviews/BEME+Guide+No+24/>

### **Keywords**

Patient mix, clinical exposure, learning in medical education, self-reported learning outcome, formal assessments, supervision, learning style

### **Headline conclusions**

- Patient mix, defined in terms of volume and diversity, is likely to be related to self-reported learning outcome; most evidently it is related to the experienced quality of the learning programme.
- Supervision in particular, but also learning style seem to mediate the relationship between patient mix and learning.
- In the literature patient mix is mostly presented without definition and is operationalised in various ways.
- The relationship between patient mix and the results of formal assessment has rarely been demonstrated.

## Background and context

Clinical workplace-based learning has been the means to becoming a medical professional for many years. The importance of an adequate patient mix, as defined by the number of patients and the types of medical problems, for an optimal learning process, is based on educational theory, and recognized by national and international accreditation standards. The relationship between patient mix and learning in work-based curricula as yet remains unclear.

## Review objectives

To systematically review research addressing the relationship between patient mix and learning in work-based clinical settings. A secondary aim was to address the influence of additional variables (e.g. supervision and learning style) on this relationship.

## Review methodology

### Search Strategy:

The search was conducted across Medline, Embase, Web of Science, ERIC and the Cochrane Library from the start date of the database to July 2011.

### Inclusion and Exclusion Criteria:

Original quantitative studies on the relationship between patient mix and learning for learners at any level of the formal medical training/career were included. Patient mix volume, i.e. the quantity of patients encountered and the diversity of skills and/or symptoms and diagnoses had to be described. Since diversity was an important dimension of patient mix, exposure to one restricted clinical problem or skill was excluded.

### Data Extraction:

A data extraction form was developed using the BEME standard coding sheet and published reviews as a basis. All selected papers were independently coded by two authors.

### Data Synthesis:

The ways in which patient mix was operationalized were categorized in equivalent approaches of volume and diversity descriptions. Learning outcomes were divided into self-reported outcomes and outcomes using formal assessments. The relationship between patient mix and different learning outcomes was identified.

## Implications for practice

- Educational research would benefit from a standardized approach to patient mix descriptions; volume can always be measured, but diversity should be explicated in relation to the learning outcome of interest.
- Future studies should aim at addressing which parts of patient mix contribute to learning and which do not and at identifying the effect of tailoring the patient mix to specific learning goals and needs of individual students.

Edited by Professor Marilyn Hammick, BEME Consultant, 2013