



Medical and Health Professional Education  
Best Evidence Medical Education

## BEME Spotlight 38

### Which professional (non-technical) competencies are most important to the success of graduate veterinarians? A Best Evidence Medical Education (BEME) systematic review

Cake M, Bell M, Williams JC, Brown F, Dozier M, Rhind S, Baillie S.

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#### Review website

<http://bemecollaboration.org/Published+Reviews/BEME+Guide+No+38/>

#### Keywords

veterinary graduate attributes, non-technical competencies, professional competencies

#### Headline conclusions

- Evidence for the importance of professional (non-technical) competencies for veterinary graduate success is limited, and strengthening this evidence base should be regarded as a research priority.
- Communication skills are currently the only veterinary professional competency with both strong stakeholder consensus, and strong outcomes-based evidence in support of relatively high importance to graduate success.
- Several other competencies are supported by multiple studies providing empirical evidence (empathy, relationship-centred care, self-efficacy, business skills), or are perceived of relatively higher importance in stakeholder surveys (awareness of limitations, professional values, critical thinking, collaboration, resilience), but not both.
- A clear example of mismatch between perceptions and empirical evidence (for business skills) provides a warning to educators that perceived importance does not reliably predict actual importance for graduate success.
- The most frequently cited sources for the importance of veterinary professional competencies do not match well with the sources providing higher-quality 'best-evidence'. In particular, some widely-cited executive summaries of industry reports represent weak evidence when assessed by BEME criteria.

#### Background and context

Despite the growing prominence of professional (non-technical) competencies in veterinary education, the evidence to support their priority within curricula is unclear. While many professional competencies are intuitively *thought* to be important and are included in published competency frameworks, few have been shown to measurably influence professional outcomes for veterinary graduates. Furthermore within such frameworks, competencies are rarely identified as being relatively more or less important, to guide their priority in learning and curriculum design.

## Review objectives

The review addressed the question: *Which professional (non-technical) competencies are most important to the success of graduate veterinarians?* predominantly from two lines of evidence:

- a) consensus of stakeholder opinion (*perceived importance*)
- b) effect on a relevant outcome measure (*empirical importance*).

## Review methodology

**Search Strategy:** We conducted searches in CAB Abstracts, Medline, Web of Science, PsycInfo and several educational databases for records 1988-2015. Search strategies were developed by iterative aggregation of keywords from published competency lists (e.g. RCVS 2014, Lewis & Klausner 2003, NAVMEC 2011), and limited to the veterinary domain by inclusion of *veterinar\** as a required term.

**Inclusion and Exclusion Criteria:** We included three types of evidence: competence frameworks developed by an expert consensus process (after 2001), surveys of relevant stakeholders (i.e. perceived importance), and studies empirically linking a professional competency to an outcome measure relevant to graduate success. Sources presenting opinion rather than evidence were excluded, as were sources in languages other than English, and non-peer reviewed sources (e.g. conference abstracts).

**Data Extraction:** Data extraction and coding for quality of evidence was performed independently by at least two reviewers. In a process influenced by the quality criteria of Harden et al. (1999) each paper was assessed for quality of study design, quality of sampling, quality of analysis, global strengths and weaknesses, and global quality of evidence.

**Data Synthesis:** Competence frameworks were mapped against a common taxonomy for health professions (Englander et al. 2013), while quantitative stakeholder surveys were aggregated using a ranking meta-analysis. Diverse evidence from competence frameworks, stakeholder surveys and empirical studies was synthesized in the form of a structured narrative, with particular attention to consensus of opinion and strength of evidence.

## Implications for practice

- With the exception of communication skills, most veterinary professional competencies enjoy inconsistent or weaker evidence of their importance. However we stress this is more indicative of the scarcity of high-quality veterinary-based education research in the field, than of the true priority of these competencies.
- This yields the implications for practice that *educators* should aim to strengthen the perceived importance of lower-ranked competencies known to be important from empirical evidence, and *researchers* should aim to strengthen the evidence base for competencies perceived to be of high importance, ideally by pursuing empirical studies based on relevant outcome measures.
- For competencies lacking both perceived and empirical evidence of importance to graduate success, the *prima facie* implication is that these should be viewed as lower curriculum priorities, unless an alternative rationale can be validly argued. Where competencies are less important from the graduate perspective but are argued as important for the broader veterinary profession (e.g. leadership, cultural competence, public advocacy, conduct of research), educators and accreditors should build a convincing alternative rationale for undergraduates to justify their priority in curricula.

## References

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