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Teaching professionalism in medical education: A Best Evidence Medical Education (BEME) systematic review. BEME Guide No. 25

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Abstract

Introduction: We undertook a systematic review to identify the best evidence for how professionalism in medicine should be taught.

Methods: Eligible studies included any articles published between 1999 and 2009 inclusive. We reviewed papers presenting viewpoints and opinions as well as empirical research. We performed a comparative and thematic synthesis on all papers meeting inclusion criteria in order to capture the best available evidence on how to teach professionalism.

Results: We identified 217 papers on how to teach professionalism. Of these, we determined 43 to be best evidence. Few studies provided comprehensive evaluation or assessment data demonstrating success. As yet, there has not emerged a unifying theoretical or practical model to integrate the teaching of professionalism into the medical curriculum.

Discussion: Evident themes in the literature are that role modelling and personal reflections, ideally guided by faculty, are the important elements in current teaching programmes, and are widely held to be the most effective techniques for developing professionalism. While it is generally held that professionalism should be part of the whole of a medical curriculum, the specifics of sequence, depth, detail, and the nature of how to integrate professionalism with other curriculum elements remain matters of evolving theory.

Introduction

> Personal and professional development is more than an isolated curriculum theme or strand, it is a way of approaching the entire course. (Gordon 2003, p. 341)

There has not been a systematic review of the literature on teaching professionalism. The heterogeneity of learning theories and teaching approaches employed make such a review a difficult undertaking. This difficulty is compounded by the varying ways that professionalism has been defined and the lack of consensus on what criteria make up medical professionalism.

This review sought to systematically identify papers that provide the best evidence for ways to teach medical professionalism over the time period 1999 to 2009 inclusive, and to assess these papers for quality. We sought to identify teaching methods that have proven effective through validation over multiple years in a curriculum or (better yet) in several institutions, or have shown effectiveness through some objective measure on evaluation. We also looked for ideas that have received prominent attention from the medical education community, to capture a theoretical, methodological understanding of what works, or what might work absent any current empirical evidence to prove that it does.

Our research question was: What teaching processes, systems, and approaches have been found to work to ensure an ethos of professionalism in medical graduates?

Practice points

- There is still no unifying theoretical or practical model to use as a format to integrate the teaching of professionalism in to the medical curriculum.
- Professionalism is learned most effectively through the influence on students of clinicians they encounter in the course of their education (role models).
- Situated learning theory is the best theoretical basis with which to develop a teaching program for professionalism.
- While it is generally held that professionalism should be part of the whole of a medical curriculum, the specifics of sequence, depth, detail, and the nature of how to integrate professionalism with other curriculum elements remain matters of evolving theory.

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We sought to discover:

- What works in teaching professionalism? (Method)
- How does it work? (Methodology)
- Why does it work? (Theory)
- What does it teach?

(a) What changes in knowledge, attitude, and behaviour have been demonstrated?
(b) Is the focus professionalism as a holistic construct, or an individual attribute?

Teaching professionalism is not akin to imparting a technical clinical skill. Rather, if successful, it brings about what Huddle terms a "personal transformation – the shaping of individual moral identity" in the learner (Huddle 2005, p. 890). Branch argues that "there are few known techniques for effective teaching of humanism" (Branch et al. 2001, p. 1067), and Goldie et al. (2007), noted that few studies examined methods of teaching it).

Working definition

While there have been many attempts at definition, none are standardised or have universal agreement. A definition is necessary to convey meaning both to those within the medical profession, conferring a shared identity, and to those outside the field, particularly the lay public, to identify what the profession is dedicated to and what it values.

As light can be described as a wave or a particle, so can professionalism be described as either an ethos or as a set of attributes to be mastered (van Mook et al. 2009b). Hafferty refers to these as "abstractedness versus specificity" (Hafferty 2004, p. 29). DeWitt Baldwin considers professionalism as a "value-oriented ideologically based construct" (Baldwin 2006, p. 103).

Viewed as a set of attributes or behaviours, it is easier to develop methods of teaching and assessing professionalism. More recent papers have focused on a more complex, nuanced definition that is based on behaviours (Green et al. 2009) or on an ethos (Coulehan 2005; Jha et al. 2006; Swick 2007; Wagner et al. 2007), rather than a fixed set of attributes. These approaches more accurately portray the complex, contextual nature of desirable approaches to medicine, and behaviours are more readily measured, so aiding in assessment.

It is this holistic conception of professionalism as an ethos, as proposed by Swick (2000), Dornan et al. (2007a), and Cruess et al. (2004), in its meaning most closely aligned with humanism, and incorporating patient empathy, work-life balance, and integrity that we used as the framework on which to build our search. However, considering that there are so many ways to define and approach professionalism, we did not restrict our search only to papers which fit this conception. Rather, we took a very sensitive, non-specific approach, allowing authors to define how they conceptualised professionalism if they then constructed a rational, evidence-based means for teaching it. However, this action resulted in a wide search and a conceptually difficult synthesis.

Methods

Conceptual framework of review

We undertook a systematic review and qualitative meta-synthesis of the literature from 1999 to 2009 inclusive to examine the best evidence for effectiveness of how professionalism should be taught. Our aim was to identify an unbiased body of best evidence (Slavin 1995) including a broad range of studies. We included not only experimental designs but also descriptive papers to capture information about current practices and to provide context. Both qualitative and quantitative studies were reviewed.

In order to focus our review, we developed a logic framework (conceptual model) (Woolf et al. 1996) framing the relationship between anticipated study design types and their likely conceptual focus in the sequence of a medical learning experience. This is presented as Figure 1.

Search strategies

Several members of the review group had personal bibliographies of professionalism, including over 700 citations. These were used to estimate sensitivity and specificity of search strings in preliminary scoping searches, and were added to the bibliographic database before the first search results. Our initial search string was modified from that of Jha et al. (2007). Search strings were broadened through three iterations of pilot testing, observing the results of different filtering strategies until apparent sensitivity and specificity appeared to be optimised. Formal sensitivity/specificity calculations were not performed. The ultimate search string was deliberately set to err on the side of maximising sensitivity without producing an unreasonable number of abstracts to review. Table 1 lists search strings used for each database.

Databases searched included Medline, the Cochrane collaboration, Excerpta Medica (EmBase), PsycINFO, Proquest, Informit, legaltrac, Philosophers Index, PreMedline, Dissertation and Theses Full Text. Libraries Australia, the British Library, Library of Congress (US), and www.Amazon.com were searched for books. The search period was 1999–2009 inclusive (10-year period).

Inclusion criteria

Any articles presenting viewpoints, opinions, or empirical research into the conditions, processes, or outcomes of medical professionalism identified through the search were considered subject to the following criteria:

- Any language
- Qualitative, quantitative, and viewpoint/opinion
- Failed efforts are of special interest
- medical students

Work that we performed in developing the conceptual model, along with initial mapping of the available literature, suggested that the literature was quite heterogeneous, and that epistemological and methodological concepts regarding how professionalism should be taught were evolving through

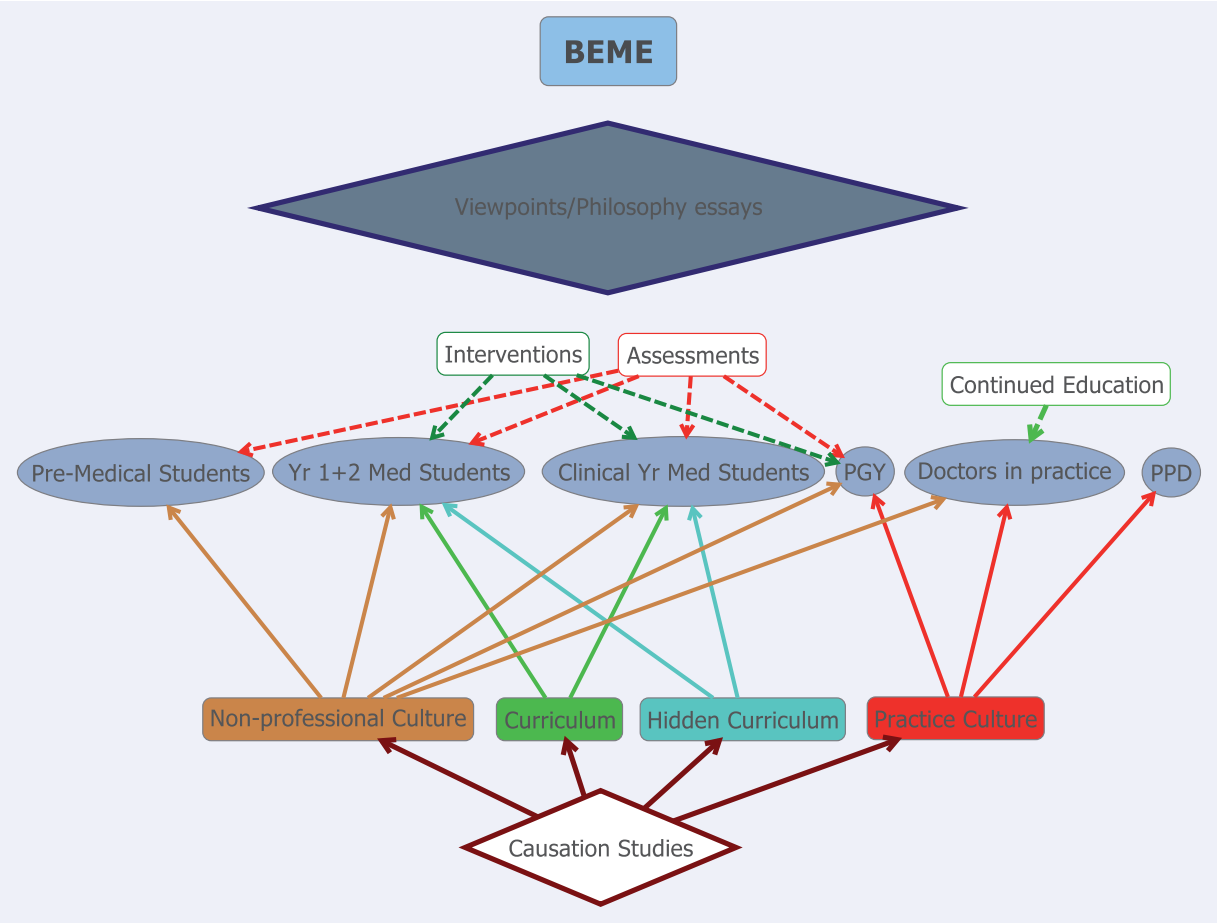


Figure 1. Logic framework: teaching professionalism in medical education.

opinion/viewpoint articles, some citing empirical evidence, others philosophical rationales. We included these in our review to capture this important evolving dialogue and not miss promising conceptual directions that are being set only in such papers by restricting the review (Edwards et al. 1998).

We considered viewpoint articles to be high-quality evidence articles if they contained well-reasoned discourses on curricular approaches and/or teaching techniques that draw on a body of theory or evidence. Lower-quality viewpoints were incidental remarks, editorials, and responses to published work that contain at least some substantive new contribution of thought.

Exclusion criteria

Papers focusing on professionalism in professions other than medicine were excluded, as were papers focusing on a single component attribute of professionalism (such as communication skills or empathy). We also excluded papers focusing on professionalism in subspecialties of medical practice. Subspecialties often have their own interpretations of what constitutes professionalism in practice (see, for example, Dinman 2000; Dorotta et al. 2006) and focus on postgraduate training. We sought evidence for instilling an ethos of professionalism in medicine that was overarching, and that occurred in medical school training, before specialty decisions are made.

Review of Abstracts

Two team members independently assessed each abstract identified in the initial searches for eligibility. Differences of opinion on whether to keep/discard were resolved by discussion between the two reviewers after each had independently reviewed the abstract. In all cases, these discussions resolved the dilemma. If agreement could not be reached, a third team member reviewed the abstract.

Abstracts were deleted at this stage if they were not relevant to the topic, and so were permanently removed from the database. An electronic copy (EndNote library) of the total bibliography of abstracts, indicating those kept and deleted, was retained for reference.

Hand searching

Hand searching was carried out in the following journals:

- *Medical Teacher*
- *Medical Education*
- *Academic Medicine*
- *Education for Primary Care*
- *Clinical Teacher*
- *Teaching and Learning in Medicine*

This search contributed one new paper to the total. We deemed these to be the most prominent target journals for

Table 1. Search strings used.

Medline 7/09/2010.
Topic: medical professionalism not restricted to medical education (and including humanism)
Date limits: 1999–2009
1. (humanist or humanism).mp. [mp = title, original title, abstract, name of substance word, subject heading word, unique identifier]
2. exp Ethics, Medical/
3. exp Ethics/
4. Social Values/
5. exp Professional Impairment/
6. professionalism.mp.
7. ((behav* or act or acts or action* or values) adj3 (ethic* or professional or professionally)).mp. [mp = title, original title, abstract, name of substance word, subject heading word, unique identifier]
8. professional role.mp. [mp = title, original title, abstract, name of substance word, subject heading word, unique identifier]
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. (doctor* or gp or ''general practition*'' or ''medical professional*'' or surgeon* or specialist* or registrar*).mp. [mp = title, original title, abstract, name of substance word, subject heading word, unique identifier]
11. exp Physicians/
12. students, medical/or students, premedical/
13. (medic* adj2 graduate*).mp. [mp = title, original title, abstract, name of substance word, subject heading word, unique identifier]
14. 10 or 11 or 12 or 13
15. 9 and 14
16. limit 15 to yr = "1999–2009"

Pre-Medline 25/8/10.
1. (medic* adj3 professionalism).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]
2. (humanis* adj3 (medic* or doctor* or physician* or ''health profession*'' or surgeon or registrar or resident or GP or ''general practitioner*'')).mp. [mp = title, original title, abstract, name of substance word, subject heading word, unique identifier]
3. 1 or 2
4. limit 3 to yr = "1999–2009"

Embase 11/09/10.
'humanism'/de OR humanist:ti OR humanism:ti OR humanist:ab OR humanism:ab OR 'medical ethics'/exp OR 'ethics'/de OR 'bioethics'/de OR 'conflict of interest'/exp OR 'complicity'/exp OR 'casuistry'/exp OR 'social psychology'/exp OR 'morality'/exp OR 'malpractice'/exp OR 'professional misconduct'/de OR 'professionalism'/de OR professionalism:ti OR professionalism:ab OR 'professional standard'/de OR 'professional role' OR behav* NEAR/3 ethic* OR behav* NEAR/3 professional OR behav* NEAR/3 professionally OR act NEAR/3 ethic* OR act NEAR/3 professional OR act NEAR/3 professionally OR acts NEAR/3 ethic* OR acts NEAR/3 professional OR acts NEAR/3 professionally OR action* NEAR/3 ethic* OR action* NEAR/3 professional OR action* NEAR/3 professionally OR values NEAR/3 ethic* OR values NEAR/3 professional OR values NEAR/3 professionally
AND
('physician'/exp OR 'medical specialist'/exp OR doctor* OR gp OR 'medical professional' OR 'medical professionals' OR surgeon* OR registrar* OR 'general practitioner':ti OR 'general practitioners':ti OR 'general practitioner':ab OR 'general practitioners':ab OR specialist*:ti OR specialists:ab OR 'medical student'/exp OR medic* NEAR/2 graduate*)
AND
[embase]/lim AND [medline]/lim
AND
[1999–2009]/py

Philosophers Index 25/8/10.
1. (medic* adj3 professionalism).mp. [mp = abstract, title, heading word]
2. Medicine.sh.
3. Professionalism.sh.
4. 2 and 3
5. 1 or 4

Legaltrac 25/8/10.
(tx (medic* w3 professionalism))

Informit 25/8/10.
(kw(medic* %3 professionalism))

Capital Monitor Results not included in library
12 refs found to various parliamentary docs

papers of the type we were searching for. Because we found no additional papers, we did not expand the hand search into other journals.

Reference list (ancestry)

Reference lists from all papers meeting quality criteria were reviewed, with relevant papers identified and obtained.

Citations (progeny)

The most productive source of relevant papers for the review that were not obtained from the initial search or team members' libraries consisted of 'cited by' searches carried out on selected papers deemed by the team to be seminal. For example, Hafferty's 1994 paper on the hidden curriculum has been cited 613 times at date of this writing. Among its progeny were five relevant papers not captured in the initial searches or hand searches.

Grey literature

We contacted a range of people who have published prominently in this area (27 individuals, 6 institutions), with

a request for conference proceedings, unpublished studies, internal reports, etc. This search did not yield any new contributions to the database.

Data synthesis

Full text papers were acquired for each abstract identified as a candidate for inclusion. These papers were then reviewed for inclusion in the final data synthesis. For accuracy and transparency, two people independently assessed each paper for eligibility for inclusion in synthesis, and, concurrently, for quality. Papers rejected were moved to a separate database.

Because we included viewpoint and opinion pieces as well as empirical research, a narrative synthesis (Popay et al. 2006) emerged as the method best suited to synthesising this large and disparate body of knowledge.

There is a growing body of literature on techniques for combining different types of evidence in a systematic review (Finfgeld 2003; Harden et al. 2004; Dixon-Woods et al. 2005; Oliver et al. 2005; Pawson et al. 2005; Barnett-Page & Thomas 2009), although this evolution is very much a work in progress, with no established consensus on how to establish quality (Dixon-Woods et al. 2007; Ring et al. 2011, p. 13).

We modelled our methodology on techniques emerging from this literature. After reviewing several critical appraisal tools (Katrak et al. 2004; Dixon-Woods et al. 2005), we opted for a narrative synthesis (Popay et al. 2006) incorporating a semi-structured analysis with unprompted appraisal (Dixon-Woods et al. 2007) for quality evaluation, inclusion in the final set of papers for review, and synthesis of evidence. In this method, the reviewers rely on their collective professional judgement to assess the worth of a given study, looking at studies in a holistic manner rather than focusing on methodologic and procedural aspects.

For this, we developed a ranking system for quality of evidence modified from the model of Mitton et al. (2007). Our rating incorporated the collective judgement of the review team on relevance to the question 'how can professionalism be taught?', the conceptual, theoretical, or methodological basis for any teaching method described, quality and appropriateness (relevance to medical education) in which the study was published, and citation count. Our rating sheet is shown in Table 2. High-quality evidence consists of papers that scored 4 or 5 (out of 5) by reviewers. Lower-quality evidence papers scored 1–3 and are not included in the final analysis. Our results, then, are an integrated review of best evidence in the literature, both qualitative and quantitative, on how to teach medical professionalism.

As a quality criterion for inclusion in data synthesis, we only included papers for which the review team could collectively agree on the answer 'yes' to all 12 of the 'Questions to ask of evidence based on experience, opinion, or theory' put forth in the first BEME Guide (Harden et al. 1999, p. 557).

Citation counts were identified for each paper as of September 2010. Citation counts were obtained from the SCI Web of Science. We performed a comparative and thematic synthesis, essentially a qualitative meta-synthesis, on these high-quality papers in order to capture the development of a

Table 2. BEME Teaching Professionalism.
Quality rating sheet
Score each paper from 1 to 5 based on criteria below.

Score	1	2	3	4	5
Relevance	Barely relevant	One or two interesting ideas, not well developed	Relevant with a few interesting ideas	Contains new, interesting ideas	Preeminent. Ground breaking paper
Conceptual basis	Trivial or incidental (letter, introductory editorial) Local experience Redundant	Ideas covered in more recent publications	A viewpoint, well expressed	A closely reasoned deductive approach without empirical data	A closely reasoned deductive approach to teaching professionalism with empirical data
Journal	Obscure journal	Fairly unknown journal	Journal with focus far removed from medical education	Good journal	Prestigious journal
Citation count	Not cited			Well cited (>10)	Highly cited
Inclusion?	Best not to include	Will not be missed	Maybe include	Definitely include	Seminal paper

Source: Adapted from Mitton C, Adair CE, et al. 2007. Milbank Q 85(4):729–768.

school of thought on defining professionalism. Mixed methods studies were counted as both qualitative and quantitative. Case reports, papers from individual institutions reporting on their experience with a particular curricular approach to teaching professionalism, were considered as viewpoint articles.

Results

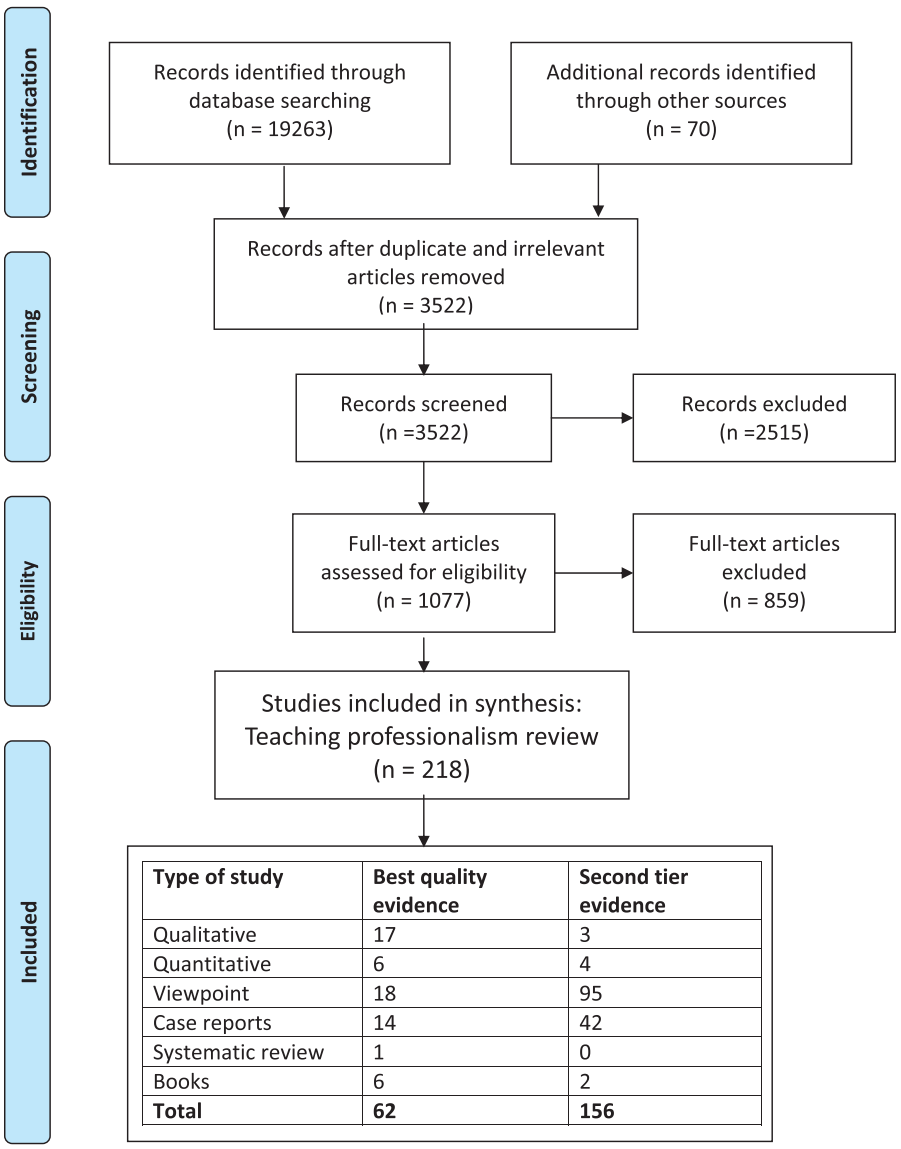
Electronic searches identified 3522 references on medical professionalism, of which 1077 were kept after abstract review. Of these, 753 came from team members' personal reference lists, 43 were from progeny (citation) lists, and 25 were from ancestry (reference lists). This supports Greenhalgh's findings that for complex areas, traditional search strings are not enough (Greenhalgh & Peacock 2005). Figure 2 presents the flow diagram through the review process, indicating numbers of records reviewed and retained at each stage.

Inter-rater agreement on whether to keep or reject individual abstracts was very good, ranging between 85% and 90%, Kappa between $K = 0.69$ and $K = 0.80$.

Full-text copies were obtained and reviews of all papers identified as being relevant through abstract review. We identified 217 papers on how to teach professionalism. We determined 43 of these to constitute best evidence for teaching professionalism by applying our quality rating criteria described above.

Our 'gold standard', the highest grade of evidence that we searched for, consisted of studies reporting on a teaching method or set of methods that produced a verified increase in some measure of professionalism, either qualitative or quantitative, over multiple years across a range of medical schools. We found none.

The closest development to this gold standard, in that is has been used over multiple years and multiple institutions, appears to be The Healer's Art, an elective course developed at the University of California San Francisco in 1992 (Remen & Rabow 2005b; George et al. 2006). The course has subsequently been adopted by many medical schools, 59 as of 2008 (Remen et al. 2008), primarily in the United States and Canada (Rabow et al. 2007). Unfortunately, there is very little



Type of study	Best quality evidence	Second tier evidence
Qualitative	17	3
Quantitative	6	4
Viewpoint	18	95
Case reports	14	42
Systematic review	1	0
Books	6	2
Total	**62**	**156**

Figure 2. Teaching professionalism. BEME review flow diagram.

evaluation data published on the course (Remen et al. 2008; Geary et al. 2009).

A group led by Weissmann, Branch, and Haidet (Branch et al. 2001; Gracey et al. 2005; Weissmann et al. 2006; Lown et al. 2007; Branch et al. 2009) has also developed an integrated curriculum that has demonstrated success, in terms of a statistically significant improvement in teaching of 'humanistic' skills and effective role modelling across a four university study group. This improvement was independent of age, gender, and specialty of participants.

Our next highest grade of evidence was a curriculum that demonstrated success in at least one institution over time. Few studies provided comprehensive evaluation or assessment data demonstrating success. We also reviewed studies reporting short-term positive results from a well-described and well-designed curriculum approach, and papers with well-reasoned view points on how professionalism might be taught, grounded in validated pedagogy and learning theory, including case reports of curricula presented by several academic centres as being successful. The majority of papers fell into this group. Table 3 summarises papers included in the review by type. Table 4 lists the most cited papers from this data set. We include citation count in our rating system as it is an indicator (albeit a crude one) of how much a paper may have contributed to debate on the topic. The potential drawback is that a study expressing aberrant views or faulty conclusions will gain high citations count through other authors finding fault with it (Popay et al. 2006).

Table 3. Best evidence on teaching professionalism by study type. ($n = 49$).

Type of study	Count
Qualitative	17
Quantitative	9
Viewpoint	20
Case report	9
Book	6

Mixed methods result in multiple counts.

Table 4. Papers on teaching professionalism with more than 50 citations.

First author	Year	Citations
Novack	1999	137
Lempp	2004	133
Inui	2003	119
Swick	1999	109
Hicks	2001	106
Coulehan	2001	93
Branch	2000	92
Branch	2001	91
Haidet	2006	82
Suchman	2004	71
Steinert	2005	70
Wear	2000	67
Kenny	2003	59
Ginsburg	2002	58
Brownell	2001	58
Klein	2003	55
Wright	2002	51
Markakais	2000	51

We identified 11 books on teaching professionalism in medicine published during the study period. These are listed in Table 5. Table 6 lists best evidence papers by nation of work group/institution.

We present our results first by type of study (quantitative, qualitative, viewpoint), with capsule reviews of high-quality studies of each type. We then summarise the contribution of each study type to the literature and examine major themes that emerge across the literature of teaching professionalism.

Best evidence studies by type

Quantitative studies

Baernstein and Fryer-Edwards performed a randomised controlled trial (the only one we found) to determine whether writing a critical incident report, participating in an individual interview with a faculty member, or a combination of the two enhanced the quantity or quality of medical students' reflection on professionalism, and thus ideally improving in professional practice as a result (Baernstein & Fryer-Edwards 2003). They found interview more constructive than writing, in that students addressed more issues of professionalism in interview and also explored the issues in greater depth.

Boenink's team in the Netherlands (Boenink et al. 2005) compared the professionalism of students before and after an educational programme on professionalism and also compared early year students with students from later years, using a set of scenarios (vignettes) each describing a professionalism dilemma as their assessment triggers. Students' ratings of professional/unprofessional behaviour in each scenario were rated against expert consensus. They found that the educational programme had a positive effect on students' ability to correctly characterise a scenario as an example of professional or unprofessional behaviour, but that when new scenarios were subsequently introduced, students were less able to judge professionalism demonstrated in them appropriately. They speculate that further use of this technique (a continued, greater series of scenarios over time) may be an effective tool to teach professionalism.

A survey of US medical students at one university (Roberts et al. 2004) found that they considered clinically associated training (role modelling, case conferences) as most effective in teaching professionalism, multidisciplinary expertise approaches (discussion with ethicists, attorneys, chaplains) effective, and formal didactic approaches (lectures, videos, grand rounds presentations) as least effective. As much of the discourse on professionalism is directed towards individual-oriented teaching and learning methods (web-based education, reflective writing), it is interesting to note that students in this study saw such learning methods as neither particularly effective nor ineffective.

Shapiro's group at the University of California Irvine instituted an 'art of doctoring' course (unit), and have been refining it since 1997 (Shapiro & Rucker 2003; Shapiro et al. 2006c). As part of this, they have measured 'point of view writing' as a learning tool (Shapiro et al. 2006b), taking

Table 5. Books on teaching medical professionalism.

Cruess RL, Cruess SR, Steinert Y. editors. 2008. Teaching medical professionalism. New York: Cambridge University Press.
Eckenfels EJ. 2008. Doctors serving people: Restoring humanism to medicine through student community service. Piscataway, NJ: Rutgers University Press.
Egan EA. 2006. Living professionalism: Reflections on the practice of medicine. Lanham, MD: Rowman & Littlefield Publishers, Inc.
Halpern J. 2001. From detached concern to empathy: Humanizing medical practice. New York: Oxford University Press.
Kao A. 2001. Professing medicine: strengthening the ethics and professionalism of tomorrow's physicians. Chicago: American Medical Association.
Kasar J, Clark EN. editors. 2000. Developing professional behaviors. Thorofare, NJ: SLACK Inc.
Mills A, et al. 2005. Professionalism in tomorrow's healthcare system: Towards fulfilling the ACGME requirements for systems-based practice and professionalism. Hagerstown, MD: University Publishing Group.
Parsi K, Sheehan M. editors. 2006. Healing as vocation: A medical professionalism primer. Lanham, MD: Rowman & Littlefield Publishers.
Spandorfer J, et al. editors. 2009. Professionalism in medicine: A case-based guide for medical students. New York: Cambridge University Press.
Thistlethwaite J, Spencer J. 2008. Professionalism in medicine. Milton Keynes, UK: Radcliffe Medical PR.
Wear D, Bickel J. editors. 2008. Educating for professionalism: Creating a culture of humanism in medical education. Iowa: University of Iowa Press.

Table 6. Best evidence teaching papers by country. ($n = 49$).

Country	Number of papers
USA	34
UK	6
Canada	6
Australia	2
The Netherlands	1

Charon's recommendation (Charon 2000) that such writing should be in plain language and from the perspective of patients, trying to capture their response to the illness experience.

These studies are all of a very preliminary, pilot nature, indicating possible future directions but not establishing validated replicated teaching methods.

Qualitative studies

Qualitative methodology studies focused on students' perceptions of the quality of the teaching on professionalism they were exposed to (Hatem & Ferrara 2001; Lempp & Seale 2004; Nogueira-Martins et al. 2006; Stephenson et al. 2006; Wear & Zarconi 2008) and the quality of students' writing on professionalism (Hatem & Ferrara 2001; Wear & Zarconi 2008; Rabow et al. 2009), as well as on medical teachers (Weissmann et al. 2006), and heads of medical education programmes (Stephenson et al. 2006).

Wear and Zarconi (2008) found reasons for both dismay and hope in a study on student views of professionalism teaching. Asking students to allow them to review for research purposes capstone essays which were required for these students' training programmes, they got about half to accept. From these essays, Wear and Zarconi gleaned that students were sick and tired of professionalism being 'shoved down our throats' (p. 950). They considered that they came to medical school with compassion and altruism, but had these qualities assaulted and challenged, largely through clinical experiences in systems where productivity and efficiency, 'an assembly line mentality' (p. 951), were everything, compassion and empathy nothing. They recommended grooming more competent role models for the task and ensuring that students are afforded opportunities to de-brief and critically reflect on their experience, both positive and negative, with trusted faculty. Stephenson's group (Stephenson et al. 2006) found a similar effect: that clinical 'hidden curriculum' experiences often negate carefully developed professionalism teaching in earlier pre-clinical years.

At the University of Minnesota (Zink et al. 2009), student essays submitted over five years were analysed in reference to Van De Camp's definition of professionalism (Van De Camp et al. 2004). Professionalism was learned through long-term continuity of experience guided by positive role models in real practice settings. Keys to success were the longitudinal nature of the learning, the student-centred ethos of clinical supervisors, and witnessing professional behaviour in a health care delivery context.

Themes identified across these studies included a lack of consistency on the teaching of professionalism (Lempp & Seale 2004; Stephenson et al. 2006), and the undermining influence of the hidden curriculum (Lempp & Seale 2004; Stephenson et al. 2006). Critical reflection (Hatem & Ferrara 2001; Goldie et al. 2007), role modelling as an effective teaching method (Brownell & Côté 2001; Lempp & Seale 2004; Weissmann et al. 2006; Baernstein 2009; Foster 2009), and early clinical contact (Nogueira-Martins et al. 2006; Goldie et al. 2007) were identified as best teaching models.

Case reports

Several groups have reported success, generally based on high scores in participant evaluations, in individual curriculum offerings.

Three institutions have published case reports on professionalism curricula based on vignettes (Case studies) as triggers to discussions aimed at fostering professionalism. Charles Hatem (Hatem 2003) (Harvard) advocates teaching professionalism in clinical practice, as the values imparted come directly from the patient care perspective. Hatem presents a faculty-led bedside teaching model based on Neher's microskills of teaching (Neher et al. 1992). The model emphasises provision of a supportive environment where students feel safe in admitting a lack of knowledge.

At the New York University School of Medicine (Horlick et al. 2006), a group of students and faculty jointly performed a needs assessment, then developed a teaching curriculum, which was then run by students. Self-reflection and reflection among peers were considered fundamental to development of professionalism.

Hill-Sakurai's (2008) group at the University of California San Francisco also employed vignettes to stimulate discussion and reflection on professionalism among third-year medical students, and between them and their educators.

Focusing on role modelling as the primary teaching method, Jones et al. (2004) at the Uniformed Services University of the Health Sciences have developed a process of reverse structured observation-students observing their preceptors called Student's Clinical Observations of Preceptors (SCOOP). They also emphasise the importance of providing a safe environment for new learners to honestly share their observations.

Reflective writing with individualised faculty feedback is the centrepiece of a pilot tested with one student group/faculty team at Brown University (Wald et al. 2009). Reflection is guide by structured questions to which students respond in filed notes, endeavouring to capture 'a-ha' moments. Here again, safety and trust are central issues.

Viewpoint articles

Shapiro and Rucker have defined a 'Don Quixote Effect' – an emotional idealism which, while illusory, can be harnessed to enable students cope with dire situations encountered in training by keeping a focus on the overriding positive aspects of the 'calling' (Shapiro & Rucker 2004). Coulehan refers to this as a 'short-lived "spurt" of cognitive and emotional idealism' (Coulehan 2004, p. 453). Medical students may experience this phenomenon when exposed to depictions of healing in literature or film, or through exposure to a positive role model. Shapiro and Rucker note the effect as regards movies, but the experience can be harnessed as a learning tool through stories, songs, and art (Kumagai 2008).

Amanda Howe emphasised attitudinal learning as fundamental to professional development. In her view: 'Attitudes are at the interface between the personal and public psyche, relying more on individual experience and the accumulated impact of social and cultural interpretations than on propositional knowledge, and are therefore less amenable to factual or didactic teaching' (Howe 2002, p. 353).

The University of Michigan instituted a 'Family Centered Experience' programme in 2003 (Kumagai 2008). In this programme, first- and second-year medical students spend time with home-bound chronically ill patients, listening to their stories and reporting back on their experience in a small group setting guided by a trained faculty member. The programme also involves students engaging in improvised interpretive projects, working in pairs, with the aim of learning to understand and express their personal reactions to such stressful patient stories, and thus develop empathy. The difference in stories between patients from different backgrounds experiencing the same medical condition brings an awareness of the individual nature of response to illness, and therefore hones the students' ability to adapt to each situation and respond with appropriate emotional engagement.

Arno Kumagai, Director of this Centre, calls this transformative learning; 'learning on cognitive, affective, and experiential levels' (Kumagai 2008, p. 656) that results in a new way of viewing reality, a higher consciousness. To date, no formal research or evaluation has been published by this programme, but it is one to watch.

Boston University (Wiecha & Markuns 2008) reported success with an online clerkship curriculum emphasising humanism. Compared to students enrolled in a face-to-face delivery, online students did significantly better at self-assessed competence in humanistic components of medical practice. There were no objective assessments conducted.

The edited collection by Cruess et al. (2009) is a rich set of theoretical and practical considerations on how to build a professionalism curriculum. It contains chapters on teaching professionalism in traditional (Goldstein 2009) and problem-based curricula (Maudsley & Taylor 2009), faculty development (Steinnert 2009), and the socialisation aspects of professionalism (Hafferty 2009). The appendix contains an excellent set of teaching resources.

Thematic analysis of the non-intervention literature (viewpoint/opinion papers) on how professionalism might be/should be taught identified six major themes. We identified these themes based on prominence (citation count) and our collective views on importance of the concepts presented for serving as a basis for teaching professionalism. The themes were:

- Focus on the institution and its modelling of values (Branch 2000; Branch et al. 2001; Kenny et al. 2003; Gordon 2003; Cruess 2006b; van Mook et al. 2009a);
- Adoption of a focus less on narrow biomedical aspects of medical education and more on moral development (Novack et al. 1999; Branch 2000; Wear & Castellani 2000; Howe 2002; Stern & Papadakis 2006);
- Identification of critical and guided reflection as best teaching methods (Novack et al. 1999; Branch 2000; Howe 2002; Kenny et al. 2003; Stern & Papadakis 2006; Shapiro et al. 2006a; van Mook et al. 2009a) and role modelling (Branch 2000; Branch et al. 2001; Howe 2002; Howe 2003; Kenny et al. 2003; Coulehan 2005; Gracey et al. 2005; Stern & Papadakis, 2006; Cruess 2006b; Cruess & Cruess 2006b; Goldie 2008; van Mook et al. 2009a);
- The selection of students with well-developed humanist traits, thus more amenable to assimilating professional traits (Novack et al. 1999; Wear & Castellani 2000; Gordon 2003);
- Teaching professionalism as experiential, not theoretical (Branch et al. 2001; Kenny et al. 2003b; Cruess 2006b; Goldie 2008);
- Professionalism should be embedded in entire curriculum (Branch 2000; Wear & Castellani 2000; Howe 2003; Cruess 2006b; Cruess & Cruess 2006b; Goldie 2008).

Emerging themes

Surveys of existing teaching strategies

A team at the Association of American Medical Colleges led by Swick undertook a two-stage survey of US medical deans in

1998 (Swick et al. 1999), which achieved a very high response rates. Nearly all schools contacted had a professionalism curriculum. Seventy-nine per cent of US medical schools addressed professionalism during orientation, usually through the 'White Coat Ceremony' devised by the Arnold Gold Foundation (Swick et al. 1999; Russell 2002; Kumpfer et al. 2002). Sixty per cent of schools spread professionalism training over a number of curriculum components, usually as part of a course focusing on various topics. Twenty of 41 schools responding to this aspect of the survey indicated that in these schools professionalism, while addressed, may be dumped into a catch-all course (unit) that may have limited prominence. Schools indicated a need for assessment instruments (85%), faculty development (82%), and teaching materials or models (77%). Most schools include professionalism in early years of the programme, fewer addressed it during later years (8 of 41). Ten per cent had no professionalism curriculum content.

The Swick et al.'s study is one of the most highly cited papers found in the search. The authors note that a lack of a commonly accepted meaning of professionalism and all that it encompasses proved a barrier to teaching in the late 1990s. The authors conclude that the teaching of professionalism needs to be enhanced, through development and dissemination of models for how such teaching could be carried out, particularly as relates to experiential learning in later years of a training programme.

Lown and colleagues surveyed US and Canadian medical school associate deans and curriculum leaders to determine priority of teaching of 'caring attitudes', and list small group discussions and didactic sessions in early training years, and role modelling and mentoring in clinical years, with skills training used throughout curricula as formal teaching methods (Lown et al. 2007). A disturbing finding was that there is insufficient faculty development in the area of professionalism in the schools surveyed, with less than half reporting that they provide formal faculty training in teaching communication and mentoring, and only 8% reporting formal triaging focused on how to develop and nurture professionalism in their students (Lown et al. 2007, p. 1519).

A similar survey of UK medical schools was undertaken by a group from King's College (Stephenson et al. 2006). In this study, as in the US study, a majority (18 of 23 medical schools) responding to their initial survey considered that training of clinical educators in professional attitudes was deficient. They also found that the hidden curriculum was very influential in undermining formal teaching, through giving students mixed messages. Students realised that appropriate attitudes and behaviour, taught in the formal curriculum, could 'legitimately be side-stepped when the pressures of the job come to bear in the real world' (p. 1076).

Finally, Stern et al. reported on an International meeting convened by the (US) Gold Foundation in 2007 to review and discuss submitted abstracts on teaching elements of humanism. Teaching strategies reported as effective by participants are those that impart to students the perspective of their patients, allow structured time for reflection on learning experiences, and provide guided mentoring to assist students in making sense of it all (Stern et al. 2008).

Role Modelling

From our review of the literature it appears that the collective view suggests that professionalism is learned most effectively through the influence on students of clinicians they encounter in the course of their education, rather than through didactic classroom sessions, although there is scant evidence for effectiveness.

Role modelling and mentoring are frequently identified as being essential and are employed as formal delivery methods for professionalism education (Ambrozy et al. 1997; Branch et al. 2001; Brownell & Côté 2001; Kuczewski 2001; Shapiro 2002; Wright & Carrese 2002; Gordon 2003; Kenny et al. 2003; Stark 2003; Coulehan 2004; Lempp & Seale 2004; Edelstein et al. 2005; Haidet & Stein 2006; Ratanawongsa et al. 2006; Weissmann et al. 2006; Yazigi et al. 2006; Cohen 2007; Goldie et al. 2007; Lown et al. 2007; Baernstein 2009; Foster 2009; Finn et al. 2010). But the medical profession has a wide range of roles and practices in systems that put great limits on personal autonomy, making role modelling problematic (Cruess 2006a).

It is the behaviour observed/witnessed by students (Wright & Carrese 2002), and the influence of role models (Wright & Carrese 2002; Mann 2002; Huddle 2005; Cruess 2006a; Johnston 2006; Levenson et al. 2010), that will form their professional personas, more than the behaviour formally taught. Educators manifesting behaviours that may be deemed inappropriate are protected to a great extent by the system, in which they have achieved a position of high status. Students, being impressionable and vulnerable, will be likely to emulate the modelled behaviour, or at least not challenge it (Brainard & Brislen 2007).

In a similar vein, Christianson et al. advocate a patient-centred curriculum in early years of training as a way to bring about organisational cultural shift towards an outward rather than inward focus, countering the hidden curriculum and enhancing development of professionalism (Christianson et al. 2007).

Place in curriculum

There is disagreement in the literature regarding whether a standard curriculum for medical professionalism can be devised that will work in any medical education setting (Howe 2003; Remen & Rabow 2005a; Remen et al. 2008), or whether such curricula must be devised specifically for an individual programme (Cruess 2006a; Cruess 2006b).

The team of Sylvia and Richard Cruess, who feature prominently in this literature individually and jointly, have argued for an essentially pragmatic approach that resonates with much of the teaching approaches that have been attempted in curriculum developments; '(T)he teaching of professionalism should start with the recognition that there is a cognitive base to professionalism which must be taught explicitly and then be reinforced and internalized by the student through experiential learning' (Cruess & Cruess 2006b, p. 207). In a series of three articles (Cruess et al. 2006; Cruess 2006a; Cruess & Cruess 2006b) and a book chapter(Cruess & Cruess 2006a) published in 2006, and culminating in a multi-authored text, which they edited, in 2009 (Cruess et al. 2009),

they have mapped out a broad conceptual and practical framework for the teaching of professionalism.

The Cruess' are advocates of situated learning theory as a basis for developing a teaching programme for professionalism (Cruess 2006a; Cruess & Cruess 2006b; Cruess 2006b), as are others (Maudsley & Strivens 2000; Kenny et al. 2003; Goldie 2008; Zink et al. 2009). They caution that a general professionalism curriculum is impossible, but rather that such a teaching programme must be tailored to each university's environment. It must take into account the tacit learning that exists in all medical education situations, be practical, rather than theoretical, in focus, and that critical reflection (they use the term 'mindfulness') (Cruess 2006a, p. 182) is the key activity to encourage in the student.

Gordon observed that some see formal professionalism curricula as an attempt to 'force all students into the straightjacket of political correctness' (Gordon 2003, p.342). She goes on to give examples of how students could master what they think is expected of them to score high marks without actually taking on board the desirable attribute; for example by, willingly engaging in teamwork exercises even though they hate teams and would avoid working collaboratively at all costs in actual practice (Gordon 2003, p. 343). She develops a framework for integrating professionalism into a comprehensive medical curriculum. Because a medical education programme must proceed in stages, integrating and building on content as the student moves through the process, it is practical to approach professionalism as a set of interlocking components (Kuczewski 2001), some of which can be taught in discrete curriculum modules.

Early patient contact appears to progress the learning curve (Goldie et al. 2002). Research into doctors' conduct in practice is lacking, and could enhance curriculum development (Gordon 2003). As with all aspects of curricula, a systems approach (Engel 1977; Armstrong et al. 2004) is necessary to ensure acceptance, success, and to anticipate and neutralize resistance.

Workplace learning, especially in long continuous attachments, what Dornan et al. refer to as 'participation in practice' (Dornan et al. 2007b), appears to be conducive. Huddle says 'trainees are subject not merely to a curriculum but to a new way of life' (Huddle 2005, p. 888), and Kenny that 'Excellence in professional practice is learned. . .through experience and critical reflection on its expression in the clinical encounter' (Kenny et al. 2003, p. 1209).

Students will encounter situations where they witness a temporary lapse in professional behaviour far more often than they will witness a totally bad doctor. Ginsburg has examined students' reactions to these situations and has captured the nature of their responses using case studies (vignettes) to capture students' immediate responses (Ginsburg et al. 2003b). They found that students responses were based in classic principles of professional behaviour (termed *avowed* by the researchers), including honesty and fairness to patients.

They also found responses grounded in other principles, such as deference to seniority, obedience, and team allegiance, not taught in the curriculum, nor necessarily antithetical to it. They are not, then (in Ginsburg's words) *disavowed*, but rather *unavowed*. They stemmed from students' rational and necessary accommodation of meeting the avowed principles they were taught (or believe they ought to manifest). As students, they are at the low end of the professional power spectrum and see an imperative to conform, to acquiesce, to not challenge, or else lose marks or be labelled troublesome.

This conditioning is certainly not specific to medicine. It undoubtedly contributes to a reticence to challenge professional lapses in colleagues or report colleagues for blatant unprofessional behaviour in practice years. Thus, it can be expected to contribute to the set of circumstances that sees unprofessional behaviour escape correction or sanction in the world of practice. Ginsburg suggests a strategy that incorporates formal acknowledgement of these responses in training. Rather than ignore them or consider them wrong, if students are presented with learning situations that compel them to develop an understanding of their nature, and the fundamentals of a coping mechanism, through 'self-reflection and self conscious rationalization' (Ginsburg et al. 2003a, p. 1021), the outcome could be a more balanced perspective on professionalism. This and similar research into how students conceptualise professionalism (Monrouxe et al. 2009; Monrouxe & Rees 2011; Monrouxe et al. 2011) may well provide important insights into curriculum development.

An alternative approach is to create a protected learning environment, focused on moral development, in which students can explore, through carefully constructed case scenarios, their reaction in terms of key professionalism aspects, thus to 'exert a countercultural influence on the dehumanizing effects of the hidden curriculum' (Browning et al. 2007, p. 905).

There are many musings in the literature that teaching professionalism didactically, as diagnostic and treatment skills are taught, is not likely to produce the best results (Huddle 2005). The hard case moral issues are actually easier to identify and confront from a pure ethical standpoint than the everyday situations where routine diagnostic and treatment decision are overlaid by an opinion of the patient, pressures of time and system, and the intrusion of personal problems to cloud vision and distract focus (Huddle 2005).

Coulehan and Williams criticise contemporary professionalism education as 'too little, too soon, too late, too distant, and too countercultural' (2003, p. 14). Too soon, because it is generally included in the first years of the medical curriculum alongside the rote memorisation of facts required by anatomy, physiology, and the other hard sciences of medicine, and so gets glossed over as a priority. Too late because by the time reflection on professionalism takes place, the socialisation process of the harsh work of clinical practice, especially in hospitals, has hard wired the student into attitudes, behaviours, and thought patterns that are the antithesis of professional. Too distant because case scenarios discussed in class often bear little resemblance to the much more nuanced situations in real clinical practice and even if not are presented without the pressures of having to placate an authority figure. Too countercultural because 'the culture of clinical training is often hostile to professional virtue' (p. 14).

Discussion

Teaching professionalism entails 'setting expectations, providing experiences, evaluating outcomes' (Stern & Papadakis 2006, p. 1794).

There is still no unifying theoretical or practical model to use as a format to integrate the teaching of professionalism in the medical curriculum that has gained wide acceptance (Gordon 2003; Gracey et al. 2005; Archer et al. 2008). Richard Cruess is of the opinion that such a curriculum is not possible, and that, rather, a professionalism curriculum must be based on, and reflect, the environment of the institution in which it is taught (Cruess 2006a, p. 180). There is a major gap in the evidence base between what has been shown to work through evaluation data (there is little of this) and what may work as set out in the abundant theoretical and opinion literature.

Considering that the modern professionalism debate has been going on for almost two decades, it is surprising that the literature does not contain more positive examples of how professionalism can be taught. Professional organisations in almost all western countries have established criteria for professionalism, and various authors have established conceptual and methodological approaches, but we have not found evidence of concerted effort mounted by cooperating institutions that has demonstrated validated, productive, replicable teaching methods for professionalism.

Professionalism appears currently to be lacking both in accepted theory and in a set of accepted practice criteria (Wear & Kuczewski 2004; Stephenson et al. 2006; Hafferty & Levinson 2008). Eckles et al. (2005) while different in focus to this review (focus on ethics education only, not professionalism as a holistic curriculum component) also found a lack of studies forming a theoretical basis for teaching methods and evaluation.

In light of the fact that there is at present no clear consensus definition of professionalism, let alone a proven methodology for teaching it as a unified construct or ethos, the best evidence available is that which focuses on individual traits of professionalism.

Strength and limitations of the present study

The potential always exists in reviewing such a broad ranging literature that important studies may have been missed. The literature also contains in-built biases of publication and reporting which skew the public discourse on newly emerging topics such as this in ways that cannot be adequately assessed. The lack of a consensus definition of professionalism makes it very difficult to construct a frame work for teaching it. The subjective nature of our quality rating, along with our decision to include viewpoint and opinion pieces, means that our review is biased.

Other limitations include the new and evolving nature of the data synthesis techniques that we have incorporated. Our very subjective approach to assessment of quality, in particular, has the potential to be reductionist, if not arbitrary (Barbour 2001). While the systematic advance planning of a systematic review ensures that the initial search strategy and inclusion criteria are objective, all synthesis strategies incorporate some element of subjectivity, and so are invariably interpretive in nature (Sandelowski 2008). Reviews such as this, combining qualitative and quantitative (and even opinion) papers are prone to criticism from the appearance of driving one agenda over others.

The greatest strength is the rigour that a team-driven systematic review can provide.

Conclusion

Evident themes in the literature are that role modelling and personal reflections, ideally guided by faculty, are the important elements in current teaching programmes and are widely held to be the most effective techniques for developing professionalism. While it is generally held that professionalism should be part of the whole of a medical curriculum, the specifics of sequence, depth, detail, and the nature of how to integrate professionalism with other curriculum elements remain matters of evolving theory.

This study will have relevance to those who are developing professionalism curricula and to those interested in the sociology and philosophy of medicine in the modern world. It benefits from the comprehensive nature of the review we undertook and the depth and breadth of thinking about teaching professionalism that emerges from the literature. The major caveat we offer is the necessarily subjective nature of our evaluation of the quality of that literature. Much of what is being done to teach professionalism has not been evaluated Future work needs to build on the philosophical base we have identified and ensure that teaching is well integrated into clinical settings, with positive role models identified, and well evaluated, including evaluations of early career doctors capturing what worked in their training periods.Practice points

- There is no consensus on best method to teach professionalism in medicine.
- Role modelling and mentoring guided by faculty are critical in successful teaching programmes.
- Role modelling and mentoring are the most effective techniques for developing professionalism.
- The environment of the institution does have a critical role in the development, implementation, and evaluation of a successful professionalism curriculum.

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Contributions of authors

HB designed the protocol for the review, reviewed all abstracts identified in initial searches and all papers identified for possible inclusion in the abstract review stage, performed ancestry and progeny searches, compiled all numerical data contained in the tables and figures, and contributed to the writing of the final paper.

NG reviewed one-third of abstracts retrieved in the initial search, reviewed half of all papers identified for possible inclusion by the review of abstracts, and wrote the final draft of this paper.

IW reviewed one-third of abstracts retrieved in the initial search, reviewed half of all papers identified for possible inclusion by the review of abstracts, and contributed to the writing of the final paper.

MH developed the search strings, retrieved and managed abstracts and papers, and made editorial suggestions on the paper.

TU supervised the work in progress and made editorial suggestions on the paper.

DN reviewed one-third of abstracts retrieved in the initial search and made editorial suggestions on the paper.

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