Defining excellence in anaesthesia: the role of personal qualities and practice environment

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Background. Calls for reform to postgraduate medical training structures in the UK have included suggestions that training should foster excellence and not simply ensure competence.

Methods. We conducted a modified Delphi-type survey starting with an e-mail request to specialist anaesthetists involved in education, asking them to identify the attributes of an excellent anaesthetist. In focused group interviews, their coded and categorized responses were ranked, and suggestions were made for incorporation into anaesthesia education. We also compared the findings with currently available professional and educational guidance.

Results. Our expert group strongly expressed the view that while superior knowledge and skills, associated with exceptional performance in clinical work, were fundamental to the excellent practitioner, they were not sufficient in themselves. A group of attributes that were personal qualities and functions of personality were also considered essential. The defining characteristic of excellence was, perhaps, the continuing urge to seek challenges and learn from them. Other high-ranking characteristics included clinical skills, interest in teaching, conscientiousness, innovation/originality, communication skills, and good relationships with patients. Knowledge for its own sake (personal involvement in research) was not rated highly, but applied knowledge was judged to underlie many of the most important categories.

Conclusions. The achievement of excellence in anaesthesia is likely to depend on the successful interplay of individuals’ personal qualities and the environment in which they work. Thus, not only trainees but also educational supervisors, heads of departments, and those responsible for organizing training systems all have a part to play in the encouragement of excellence.

Keywords: education; education, continuing; education, junior staff; organizations, Royal College of Anaesthetists

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In the last 15–20 yr, postgraduate medical education in the UK has been influenced by the ‘competency movement’, in that training and assessment have focused on the acquisition and demonstration of competences.¹ Following the difficulties created by the Medical Training Application Scheme (MTAS) in 2007, where matching applicants to training posts was much more difficult than in previous years, the UK Department of Health commissioned an inquiry into the early years of postgraduate medical training. This inquiry, ‘Aspiring to Excellence’ (known as the Tooke report),² criticized the competency-based training scheme in the UK and repeatedly urged medical educators and their funders to seek ways of encouraging excellence in future doctors. However, the report neither defined excellence nor offered suggestions as to how it might be achieved in any particular clinical specialty.

In response to this, and following on from a recent review,³ we aimed to define excellence in anaesthesia from within the speciality and explore the extent to which the promotion of excellence could be incorporated into the anaesthetic education curriculum.

Methods

We conducted a two-round modified Delphi process to capture and refine expert opinion.⁴ We initially contacted 110 Royal College tutors, Regional Advisors, and Heads of Schools of Anaesthesia and 25 trainee members of the
Society for Education in Anaesthesia (UK) by electronic mail. Respondents were invited to provide six factors which they felt were important characteristics of excellent anaesthetists.

The responses were grouped into categories using the constant comparative method. The initial respondents were contacted again to invite them to a 1 day focused group interview and discussion workshop. This contrasts with a standard Delphi process, where responses are usually circulated anonymously and participants do not meet in person. The workshop was designed first to form the second round of the consultation process but also to check the validity of the categories we had identified. Of those invited, 16 were able to attend, providing us with a sample of anaesthetists, plus a member of the Royal College of Anaesthetists’ Patient Liaison Group. They were sent the spreadsheet containing the categorized data. After a briefing session to clarify the aims of the project and outline the purpose of the workshop, participants were asked to rank the categories provided in order of importance and attempt to describe how the different elements of excellence might be related. Once the rankings were completed, a third session was devoted to discussion of the highest-ranked attributes and the extent to which they could be incorporated into the curriculum for anaesthesia education. Notes were made during this session and later transcribed for analysis.

Once these two rounds were completed, we undertook a mapping exercise to compare how far the attributes we identified were reflected in selected published documents on professional standards and development. Specifically, we aimed to examine whether the attributes were mentioned in the documents, and if so, whether criteria were given as to how excellence within these might be judged. The first source was ‘Good Medical Practice’ from the UK General Medical Council. The second was the CanMEDS competency framework from the Royal College of Physicians and Surgeons of Canada. The prime role within this seven-role framework is that of medical expert, supplemented by the roles of the communicator, collaborator, manager, health advocate, scholar, and professional. Finally, we reviewed the Royal College of Anaesthetists’ training curriculum.

Results

In the first round, 335 responses were received from 43 consultants and two trainees, with a median (IQR) of 6 (2–12) items per respondent. These were classified into 27 categories (Table 1).

In the second round, the categories were given rankings by the focus group participants (Table 2). In addition, the group discussions provided useful contextual data which helped the researchers to refine the classification of the initial data, offered useful comments on the nature of excellence in anaesthesia, and stimulated suggestions as to how it might be incorporated into the training curriculum.

Some general characteristics of excellence were identified. First, excellence in clinical work was seen as a pre-requisite for excellence of any other sort. Secondly, excellence was seen to be context-specific, in that the attributes identified were thought of as particular to anaesthesia. Thirdly, excellence may not be manifest in all the domains of even the most outstanding practitioner’s work because different individuals have differing contexts and opportunities for development. Fourthly, excellence was felt to be dynamic, in that it was thought both to develop with time but also possibly change focus throughout the stages of the consultant career.

Finally, there was a consensus that it is not possible to be excellent if there is a serious flaw in any aspect of one’s work. Some of the ranked attributes (Table 2) are discussed further here.

Clinical skills

While not the highest-rated category, the fundamental nature of these was reflected in the comment: ‘You must be able to display knowledge of the subject matter and skills required to perform the task required. Without this you are nothing in anaesthesia’.

‘Striving for excellence’

This was typified by proactivity, conscientiousness, constant review of practice (including errors made) to try to improve, and ‘striving for perfection’.

Innovation/originality

The recurrent theme here was ‘not accepting the status quo’. This could be evident in a willingness to innovate (provided that the value and safety of the changes could be proven), in not being afraid to be different, showing open-mindedness, strategy, and vision.

Good communicator

‘Communication’ here referred to general interaction both with patients and with other staff, but included specifics such as the ability to be diplomatic in situations of conflict, negotiation, good communication at all levels, and knowing when and how to apologize.

Teacher

There were three elements to the initial responses categorized under this heading. The first was the ability to inspire through enthusiasm for the subject. The second was a willingness to teach not only trainee anaesthetists, but also other theatre staff and students. Lastly, a pastoral role in supporting trainees was also mentioned. However, although teaching was highly rated in the initial round of responses, it was not in the second.

The role of knowledge

Knowledge as knowledge for its own sake weighted poorly. Academic excellence was not felt to be a marker of general excellence. However, many of the statements in the other categories presume applied knowledge or as one respondent
<table>
<thead>
<tr>
<th>Category</th>
<th>Number of responses</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>25</td>
<td>The ability to educate and inspire peers, trainees, medical students, and other clinical staff. Taking the time to teach. Enthusiasm to teach all comers. A talent for teaching. Inspirational to others. Able to express ideas and concepts clearly, both to individuals and groups.</td>
</tr>
<tr>
<td>Clinical skills</td>
<td>22</td>
<td>Demonstrates professional artistry in giving a good anaesthetic. The capability to administer an anaesthetic smoothly, safely, and slickly in both complex and routine circumstances. Manual dexterity and technical competence.</td>
</tr>
<tr>
<td>‘Pull their weight’</td>
<td>21</td>
<td>Willing to ‘go the extra mile’. Pulls his/her weight in the department, not necessarily head of department, but a reliable and hard-working member who can be called upon to help when needed. Reliability—those who habitually offer to help out in times of crisis—that is, short-term notice of sickness for on call cover.</td>
</tr>
<tr>
<td>Innovative/original</td>
<td>21</td>
<td>Flexibility of thought and actions. Unafraid to challenge established ideas. A willingness to innovate, provided that the value and safety of the changes can be proven. Creativity (setting up new services, changing from weak to strong service provision, thinking of new ways to provide excellent service for patients).</td>
</tr>
<tr>
<td>Knowledge</td>
<td>20</td>
<td>Contemporaneous in general and specialist area of practice. Intellectual capacity and ability to integrate knowledge with skills. Relevant background knowledge and ability to apply it. Being up-to-date with current practice, drugs, techniques, literature, and adhering to current recommended standards of practice.</td>
</tr>
<tr>
<td>Leadership</td>
<td>17</td>
<td>Can interact with, or lead, a team. A team player who is able to step up as team leader in a difficult situation. Enjoying good professional relationships within the various teams that one works with.</td>
</tr>
<tr>
<td>Good communicator</td>
<td>16</td>
<td>Has ‘the common touch’, can communicate easily and clearly with all colleagues and patients. The ability to communicate clearly, politely, and effectively with both patients and staff. A collaborative mentality: able to communicate effectively with patients, relatives, and colleagues and to include others when making decisions.</td>
</tr>
<tr>
<td>Relationship with patients</td>
<td>15</td>
<td>Inspires patients’ confidence. Protecting the patient and acting in the patient’s best interest. Empathy towards patients and relatives. Impeccable bedside manner. Ability to form effective rapport with patients.</td>
</tr>
<tr>
<td>Liked and respected</td>
<td>15</td>
<td>They inspire trust and are trustable. They easily become the recipient of confidences. Ability to get on with colleagues and the theatre team. Above all is the person a senior anaesthetist turns to for help and asks to anaesthetize their spouse.</td>
</tr>
<tr>
<td>Well organized</td>
<td>12</td>
<td>The ability to choreograph an operating list so that all aspects run smoothly. Forward planner. On time and prepared. Organized/efficient. They have a method/system.</td>
</tr>
<tr>
<td>Calm</td>
<td>12</td>
<td>In control. Calm under pressure. Emotional stability, calm in emergency, clear and quick thought processes, no panic, non-aggression but able to convey urgency when necessary.</td>
</tr>
<tr>
<td>Organizational efficiency</td>
<td>12</td>
<td>Makes efficient use of team. Timeliness—starting on time, efficient work practices, finishing on time, business awareness.</td>
</tr>
<tr>
<td>Experience</td>
<td>12</td>
<td>‘Out of programme’ experience. Broad background of specialities. Wide knowledge of anaesthetic practice, wide variety of techniques at one’s fingertips, wide exposure to different surgical specialities.</td>
</tr>
<tr>
<td>Flexible</td>
<td>11</td>
<td>Adaptable and able to anticipate. Has flexible approach. Able to adapt to unusual circumstances and defuse any tensions. Not rigid.</td>
</tr>
<tr>
<td>Enthusiastic/keen</td>
<td>11</td>
<td>Enjoys the job. Passion. Having a particular ‘glow’—being someone people like having around.</td>
</tr>
<tr>
<td>Alert</td>
<td>10</td>
<td>Global awareness of working place and process. Observant/perceptive/situationally aware/sees ‘the big picture’.</td>
</tr>
<tr>
<td>Other characteristics</td>
<td>9</td>
<td>Common sense approach. Consistent. Insight. High level of objectivity.</td>
</tr>
<tr>
<td>Research and audit</td>
<td>7</td>
<td>Experience of research techniques, presentations, publications.</td>
</tr>
<tr>
<td>Understands limitations</td>
<td>6</td>
<td>Readily asks for help (and offers it). Knows when to discuss with a colleague.</td>
</tr>
<tr>
<td>Decisive</td>
<td>5</td>
<td>Assertive. Positive decision maker. Appropriately confident.</td>
</tr>
<tr>
<td>Caring</td>
<td>5</td>
<td>Compassion. Has time to listen to patients.</td>
</tr>
<tr>
<td>Outside interests</td>
<td>4</td>
<td>Rounded person. Polymath.</td>
</tr>
<tr>
<td>Record keeping</td>
<td>1</td>
<td>Documentation impeccable.</td>
</tr>
<tr>
<td>Total</td>
<td>335</td>
<td></td>
</tr>
</tbody>
</table>
phrased it, ‘the ability to wield knowledge’. Taking an active part in the generation of new knowledge through research was hardly mentioned.

In discussion of the relationships between elements, respondents were clear that some characteristics of practice are so basic that they would not qualify for excellence—for instance, keeping adequate records. However, some attributes were thought to be more discriminatory between ‘average’ and excellent practice. Some attributes could be thought of as essential for excellence and some as merely desirable. Another suggested model posited that some attributes (for instance, communication and leadership skills) might be important in themselves but might function mainly as enablers for other characteristics. This is relevant in practice because, if some attributes act as facilitators to allow expression of others, trainers might expect greater overall gains by fostering these elements in training. Another option suggested that attributes of excellence were related in a hierarchical fashion.

When making comparison with existing guidance, we found that the General Medical Council’s document *Good Medical Practice* advice touches on a number of the attributes identified. These are: keeping up to date with advances in practice, maintaining and improving performance, good communication (focusing as would be expected on communication with patients), maintaining trust in the profession, and working in teams. Simple comparison with the CanMEDS framework suggested that of the seven roles, ‘manager’ and ‘scholar’ featured less prominently in respondents’ understanding of excellence in anaesthesia.

The Royal College of Anaesthetists’ training curriculum specifically mentions professionalism in its introductory general guidance. Training in professional knowledge, skills, attitudes, and behaviour places some emphasis on communication skills but also includes an understanding of the responsibilities of professional life, teaching, management, and ethics. The authors note ‘aspects of personality and lifestyle e.g. unavailability at short notice when on call, persistent lateness wasting theatre time, attitudes that recurrently produce conflict in the working environment, are just as important to patient care as the ability to understand key aspects of pharmacology or monitoring’. This echoes our findings, which suggest it is personal qualities as much as, if not more than, knowledge and skills, that dictate effectiveness in anaesthetic practice. Appendices set out assessment criteria for attitudes and invite assessors to comment on reliability/time-keeping, control of moods and emotions, initiative, assertiveness, confidence, teamworking, enthusiasm, and departmental involvement, among others.

The College document does, then, point the way to the areas of practice where excellence might show itself. It is, however, designed as an aid to achieving competence in training rather than a guide to developing excellence at any stage in an individual’s career.

**Discussion**

This is, to our knowledge, the first attempt to define excellence in anaesthesia from within the profession using respondents’ own understanding as ‘arbiters of practice’ in their own field of expertise. Most of the attributes of excellence identified by this study were personal qualities, with perhaps the single defining characteristic of excellence being the continuing urge to seek challenges and learn from them. Knowledge for its own sake was not rated highly, but applied knowledge was judged to underlie many of the most important categories. This interplay of specialist knowledge and desirable behaviours is a characteristic of the professions in general. Our findings have helped us crystallize a framework for further development.

We undertook comparisons with existing guidance to try to establish what attributes were covered in such materials. Our comparisons with the General Medical Council’s *Good Medical Practice* showed some common ground but yielded no specific pointers to excellence. This is perhaps not surprising, given that they are aimed at defining a minimum acceptable standard rather than anything higher. The professions are thought to represent knowledge expressed in a particular social context, with a specific set of social obligations and norms. A professional has been defined as a ‘proper master’ and this perhaps encompasses mostly neatly what we are trying to achieve, for it combines an idea of mastery of knowledge

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Number of times ranked in top 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Can do’</td>
<td>2</td>
</tr>
<tr>
<td>Knowledge</td>
<td>2</td>
</tr>
<tr>
<td>Enthusiastic/keen</td>
<td>1</td>
</tr>
<tr>
<td>Any judgment</td>
<td>1</td>
</tr>
<tr>
<td>Teaching</td>
<td>1</td>
</tr>
<tr>
<td>Aware of limitations</td>
<td>1</td>
</tr>
<tr>
<td>Experience</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
</tr>
</tbody>
</table>

**Table 2 Most highly ranked attributes in second round exercise**

- **Good communicator**
- **Liked and respected**
- **Flexible**
- **Leadership**
- **‘Can do’**
- **Knowledge**
- **Judgment**
- **Organizational efficiency**
- **Enthusiastic/keen**
- **Caring**
- **Alert**
- **Calm**
- **Teaching**
- **Aware of limitations**
- **Experience**
- **Total**

The results for the second round exercise are given in Table 2. We undertook comparisons with existing guidance to try to establish what attributes were covered in such materials. Our comparisons with the General Medical Council’s *Good Medical Practice* showed some common ground but yielded no specific pointers to excellence. This is perhaps not surprising, given that they are aimed at defining a minimum acceptable standard rather than anything higher. The professions are thought to represent knowledge expressed in a particular social context, with a specific set of social obligations and norms. A professional has been defined as a ‘proper master’ and this perhaps encompasses mostly neatly what we are trying to achieve, for it combines an idea of mastery of knowledge

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and skill with a strong moral sense. However, our respondents mentioned only infrequently the moral and ethical aspects of practice, although the ethic of duty and service came through to some extent in the conscientiousness outlined under ‘striving for excellence’. The historical origins of being ‘professional’ have been described as being more in trustworthiness, in the sense of confidentiality, as much as in competence. It may be that the post-modern trend towards competence has shifted this focus somewhat. CanMEDS was a useful comparator as it served as a reminder of the various domains of practice. Some domains were represented in our respondents’ understanding of excellence and not others. Scholarly activity in terms of personal involvement in research was not highly regarded, though, as Kennedy notes, current trends point to an increasing emphasis on knowledge creation and interpretation at postgraduate levels in higher education outside the professions. Exactly why research was not noted by our respondents is not clear, but it may be related to the personal views of teachers within anaesthesia departments, or the fact that academic departments of anaesthesia are not always able to play such a prominent role in teaching as they might. Comparison with the Royal College of Anaesthetists’ training curriculum was useful as it identified areas where elements may be incorporated in the future. It was notable that in addition to the introductory treatment of attitudes and behaviour, specific qualities are mentioned in particular clinical contexts. For instance, ‘vigilance’ and ‘attention to detail’ are cited in the section devoted to equipment and monitoring and ‘calmness under pressure’ is mentioned in the ‘abstercia anaesthesia’ section. ‘Operationalizing’ possibly vague attributes in specific workplace contexts offers promise as a means of promoting such qualities in trainees. In previous publications, anaesthesia-specific enquiries touching on the attributes identified have included an account of how expert anaesthetists assess competence in trainees and a Delphi-type study of professionalism in anaesthesia. The latter study drew up lists of desirable qualities in three groups of attributes: ‘humanistic’ (general professional qualities), personal development, and ‘meta-competencies’, or those specific to anaesthesia. Expert anaesthetists were asked to rate the qualities in each. In the last category, the most highly rated items were: vigilance, responsivenes, teamwork, advocacy, flexibility, decisiveness, manner, confidence, communicativeness, and expert pattern recognition. Our study has expanded this by introducing a number of other attributes, with illustrative examples, and also brings the added dimension of using features identified unprompted and de novo from the anaesthetists surveyed. A study identifying the principal non-technical skills required by anaesthetists is also relevant and some recently published reviews detail the human factors issues underlying the desirable qualities in Kearney’s list. Lastly, excellence is something intrinsic to the individual but this must be influenced for better or worse by the environment within which that individual works. Gladwell, in his book Outliers, studied why some people become successful and concludes that although there may be something different about them as individuals, what ultimately determines whether they become successful are environmental influences such as culture, community, family, or generation. Common to these approaches is the sense that higher level cognitive competencies arise in appropriate environments, from sustained collaborative efforts in solving problems and building knowledge together. These ideas have three implications for training in anaesthesia. The first is that a certain duration of exposure is necessary for proficiency, both in terms of total hours but also probably in terms of spread over time. The second is how some of this exposure time can be made more challenging. Although returning to the days where trainees were simply allocated to unaccompanied operating lists might offer the required number of hours, what is more important, especially as workplace training time is reduced, is to make available opportunities for development. The third relates to the training environment in which the trainee works and how this can be structured to foster excellence. Although career progress at any stage seems to involve seeking or creating a work milieu which provides the support necessary for growth and development, the focus of our recommendations is on trainees because this is the thrust of the Tooke report. Trainers, including College tutors and educational supervisors, should recognize that excellent individuals seem to be those who respond well to challenges and are disposed to reflect on, and learn from them. They should encourage such individuals to take and/or create such opportunities in their clinical work (without endangering patients), but also across the various domains of consultant practice. This should be accompanied by feedback as part of the formative assessment process. In the context of providing challenges, the role of research deserves a particular mention. Although the respondents in our enquiry seldom mentioned research as a component of excellence, it does provide an opportunity for self-development and also lead to the production of new knowledge. Finally, individual trainers should be aware of the importance of role modelling. This has been well defined elsewhere. Given firstly that many characteristics of excellent anaesthetists are personal qualities which cannot easily be taught and secondly that success seems to depend on the interplay...
between such individuals and their surroundings, it seems logical to try to influence the developmental environment. Those responsible for running departments should try to ensure that a range of appropriate challenges is offered. Departments in which a critical mass of consultants promote high standards, review their own practice, discuss new developments and trends in an informed and critical manner, and expect trainees to rise to those standards are more likely to promote excellence than a department that is dysfunctional and where consultants do not set a good example or are inconsistent in their adherence to standards.

Lastly, those responsible for organizing structures of training and assessment should consider refining the available tools not only to ensure competence in training, but also to recognize and promote excellence. For instance, the annual review of competency progression process, and the selection process between core and specialist training, both provide incentives for trainees to demonstrate that they offer something more than the average. Excellence appears to be a set of qualities that transcends any one clinical branch of anaesthesia but all of the national organizations can contribute by continuing to explore ways in which excellence in their own areas of clinical practice can be defined, measured, and used to promote continuous improvement.

For those already in established practice, our findings offer a framework for appraisal and continuing professional development. For instance, the consultant appraisal process could use our findings to help individuals assess where their strengths are and how their career development might be directed, so that these skills can be harnessed for the benefit of the individual and the profession as a whole.

Although our work continues to illuminate excellence in anaesthesia, many unknowns remain. Further work on education in anaesthesia should elucidate the relationship between competence and excellence and identify those attributes, if any exist, which could reliably act as discriminators between them. It would also be useful to know how excellence could be measured or whether observable markers of excellent practice could be developed. For example, educationalists should attempt to develop tools for workplace-based assessment which take these into account. Finally, there is scope for identifying mechanisms for rewarding excellence and investigating their effect on its development.

Conflict of interest
None declared.

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