Priorities for professionalism: what do surgeons think?

Attributes relating more to society at large were prioritised less than individualised skills

Abstract

Objective: To gain an understanding of the relative importance of the nine surgical competencies and their 27 attributes defined by the Royal Australasian College of Surgeons (RACS), which together provide the curriculum framework for today's surgeons.

Design, setting and participants: Between 9 August and 30 September 2010, trainees and Fellows of the RACS across Australia and New Zealand actively involved in educational activities rated, via questionnaire, the importance of the RACS competencies (technical expertise, communication, professionalism, medical expertise, judgement and decision making, scholarship and teaching, collaboration and teamwork, management and leadership, and health advocacy) and associated attributes.

Main outcome measures: Importance of ranking competencies and their attributes for surgical education and training.

Results: Of 3054 questionnaires distributed, 1834 (60%) were returned. We identified clear priorities in the perceived relative importance of the nine competencies and 27 attributes. The most important attributes were competence, insight, and recognising conditions amenable to surgery; least important were responding to community and cultural needs, supporting others, and maintaining personal health and wellbeing. Key differences were noted for the competency of collaboration and teamwork, which was ranked as more important by trainees than by Fellows. Female trainees and Fellows regarded all attributes as more important than did male trainees and Fellows.

Conclusion: In a complex environment with multiple pressures, the priorities of the competencies are important. Trainees and Fellows had a very similar approach to the prioritisation of the attributes. Of concern is the lesser importance given to attributes beyond individual expertise.

Professionalism underpins the commitment made between a profession and society. This social contract balances the benefit to a profession of a monopoly over the use of its knowledge base, its right to considerable autonomy of practice, and the privilege of self-regulation with responsibilities and accountabilities to the community.

Medical practitioners have embraced professionalism over the millennia, from the Hippocratic Oath[1] to the 19th century[2] and the present day. Professionalism has recently been highlighted,[3] but there have been concerns that not all its components are viewed as important[4,5] or are reflected appropriately in surgical training endeavours.[6]

Definitions of professionalism are abundant, contested and reflect educational, sociocultural and historical contexts.[7,8] Core elements include mastery of a complex body of knowledge and skills, service to others, commitment to competence, integrity, altruism and promotion of public good, autonomy, self-regulation and accountability to society.[9] Given the dynamic and changing context, it is important to understand how professionalism is evolving.

Little is currently known about how surgeons involved in training and surgical trainees perceive the importance, priority or value of the different areas that they need to master to be competent and to perform well. In Australia and New Zealand, the Royal Australasian College of Surgeons (RACS) has defined the competencies required for surgical practice. The RACS surgical competence and performance guide is the basis of the curriculum that leads to the Fellowship of the College.[10] It is based on the competencies developed by the Royal College of Physicians and Surgeons of Canada — the CanMEDS model.[11] Local adaptation since 2001 has seen the RACS develop nine competencies to reflect the technical expertise and decision making required in surgical practice. Three attributes per competence provide further detail, although not comprehensiveness, to the overall requirements. Given the broad and changing definitions of professionalism, we evaluated the RACS competencies and associated attributes for importance.

Our study explored systematically what surgeons and surgical trainees understand as priorities for competent professional practice. It was undertaken within the broader context of developing system-wide training programs to enable surgeons to demonstrate their professionalism more fully.

Methods

Ethics approval for the study was obtained from the human research ethics committees of the University of Melbourne and the RACS. The overall research design included a detailed questionnaire comprising a number of question banks, with some free-text fields, distributed to 3054 RACS trainees and Fellows who were actively involved in the educational activities of the College. Separately and consequently, a semistructured interview was undertaken with a smaller number of the questionnaire respondents who volunteered for the interview stage. This article relates to the bank of RACS competency questions.

Participants

At the time of the distribution of the questionnaire, from 9 August to 30 September 2010, there were 1222 trainees and 4763 actively practising Fellows within the RACS. All trainees were invited to complete the questionnaire, and all Fellows recorded

David J Hillis
DEd, FRACMA, FRACS(Hon)[1,2]

Michael W Gorton
AM, FRACS(Hon), FANZCA(Hon)[3]

Bruce H Barraclough
AO, FRACS, FACS[4]

David Beckett
PhD, FACEL, FPESA[2]

1 Royal Australasian College of Surgeons, Melbourne, VIC.

2 University of Melbourne, Melbourne, VIC.

3 Russell Kennedy Lawyers, Melbourne, VIC.

4 Australian e-Health Research Centre, Brisbane, QLD.

david.hillis@surgeons.org

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1 The nine Royal Australasian College of Surgeons competencies and their attributes[10]

Competency and attributes	Description
Medical expertise	
Compewwtence	Mastering and maintaining current knowledge and skills
Managing safety and risk	Ensuring patient safety by understanding and managing clinical risk
Monitoring and evaluating care	Regularly reviewing and evaluating clinical practice
Judgement and decision making	
Considering options	Generating alternative possibilities and assessing them
Planning ahead	Predicting what might happen due to action or non-action
Implementing and reviewing decisions	Undertaking chosen action but reviewing its suitability
Health advocacy	
Caring and compassion	A sympathetic consciousness of another's distress
Meeting patient, carer and family needs	Engaging them in planning and decision making
Responding to community and cultural needs	Demonstrating the impact of culture and spirituality, and considering community needs
Technical expertise	
Recognising conditions amenable to surgery	Understanding when intervention is or is not indicated
Maintaining dexterity and technical skills	Demonstrating sound surgical skills
Defining scope of practice	Undertaking surgery appropriate to training, expertise and surroundings
Professionalism	
Insight	Self-awareness, the ability to recognise and understand one's actions
Morality and ethics	Acting for the public good
Maintaining personal health and wellbeing	Particularly if it impacts on colleagues and team members
Communication	
Discussing and communicating options	Communicating clearly with patients
Communicating effectively	With patient, family and team
Gathering and understanding information	Seeking timely and accurate information
Collaboration and teamwork	
Teamwork	Ability to recognise and respect the expertise of others and work with them
Documenting and exchanging information	Ensuring a shared understanding among team members
Establishing a shared understanding	All relevant clinical information is understood by team
Management and leadership	
Setting and maintaining standards	Supporting safety and quality by adhering to acceptable principles of surgery
Leading that inspires others	Appropriate mixture of both calm demeanour yet clear decision making
Supporting others	Providing cognitive and emotional help to team members
Scholarship and teaching	
Improving surgical practice	Evaluating surgical practice and identifying opportunities for improvement
Showing commitment to lifelong and reflective learning	Through own learning
Teaching, supervision and assessment	Facilitating education of students, patients and colleagues

in the membership database as being involved in educational activities were also selected. Fellows who were not involved in surgical educational activities did not receive a questionnaire. The final number invited was 1222 trainees and 1832 Fellows from all regions of Australia and New Zealand. Although all questionnaires were identified with a unique identifier to allow for follow-up, anonymity and confidentiality were assured.

Materials and procedures

The questionnaire incorporated the nine RACS competencies and the associated three attributes per competency (Box 1), with modification for brevity and clarity. The questionnaire was content valid as it was directly based on the established RACS competency framework. Within the questionnaire, all participants were informed that the intent of the research was to progress the understanding of professionalism and the way it is supported, taught and learnt. Participants were instructed to rate the importance of each attribute for professionals on a 5-point Likert scale (1 = not at all important, 5 = very important).

The questionnaire was disseminated electronically with a follow-up email. A hard copy of the questionnaire was

2 Overall ranking of importance of attributes defined in the Royal Australasian College of Surgeons surgical competence and performance guide[10]*

Overall ranking of attributes from most to least important	Sample size	Mean (SD)	Median (IQR)
Competence	1818	4.77 (0.44)	5 (0)
Insight	1817	4.75 (0.46)	5 (0)
Recognising conditions amenable to surgery	1806	4.75 (0.45)	5 (0)
Discussing and communicating options	1807	4.60 (0.53)	5 (1)
Morality and ethics	1814	4.59 (0.59)	5 (1)
Communicating effectively	1806	4.58 (0.54)	5 (1)
Caring and compassion	1813	4.55 (0.58)	5 (1)
Teamwork	1813	4.54 (0.58)	5 (1)
Maintaining dexterity and technical skills	1806	4.53 (0.57)	5 (1)
Setting and maintaining standards	1806	4.51 (0.59)	5 (1)
Gathering and understanding information	1800	4.47 (0.56)	5 (1)
Considering options	1802	4.47 (0.57)	5 (1)
Managing safety and risk	1805	4.44 (0.61)	5 (1)
Improving surgical practice	1804	4.43 (0.61)	4 (1)
Defining scope of practice	1806	4.43 (0.66)	5 (1)
Planning ahead	1807	4.42 (0.62)	4 (1)
Showing commitment to lifelong and reflective learning	1808	4.39 (0.62)	4 (1)
Monitoring and evaluating care	1809	4.37 (0.62)	4 (1)
Documenting and exchanging information	1804	4.36 (0.62)	4 (1)
Leading that inspires others	1806	4.36 (0.64)	4 (1)
Teaching, supervision and assessment	1806	4.34 (0.63)	4 (1)
Establishing a shared understanding	1806	4.33 (0.62)	4 (1)
Implementing and reviewing decisions	1805	4.31 (0.62)	4 (1)
Meeting patient, carer and family needs	1805	4.31 (0.63)	4 (1)
Maintaining personal health and wellbeing	1796	4.28 (0.70)	4 (1)
Supporting others	1806	4.15 (0.71)	4 (1)
Responding to community and cultural needs	1804	3.86 (0.83)	4 (1)

IQR = interquartile range. * 5-point Likert scale: 1 = not at all important, 2 = not important, 3 = somewhat important, 4 = important, 5 = very important. ◆

sent to those who had not responded and was then followed up by a telephone call.

Statistical analysis

Neither the nine competencies nor the 27 attributes have previously been confirmed statistically as independent factors. Analysis was undertaken to compare the importance of the attributes at an individual and grouped level, and to determine whether they were independent and whether the RACS groupings were confirmed by the data.

The data were coded and entered into SPSS version 17 (SPSS Inc). We also applied tests of skewness and kurtosis.[12] Because of the skewed nature of the data, we conducted non-parametric statistical tests to analyse subgroups: the Mann–Whitney U test for pair comparisons and the Kruskal–Wallis test for comparison of more than two groups. The results for all attributes were assessed within their respective competencies to gain a relative understanding of the importance of that competency. Comparisons were made between Fellow and trainee, genders, age groups, specialties and regions. In this article, we present our findings for Fellows and trainees, and by gender.

We also applied tests of reliability, with internal consistency being calculated through use of Cronbach α value (theoretical values between 0 and 1). Inferential statistics were then used to identify differences between groups and to look for relationships between attributes. Groups for comparison had a sample size greater than 100. Correlation studies were structured to investigate relationships between particular characteristics of the subgroups.

We undertook multivariate analysis to establish the independence of the variables and also to determine whether the groupings of attributes proposed by the RACS within the competency framework could be validated in the context of our questionnaire. The exploratory factor analysis used an extraction method of unweighted least squares.

3 Importance of the Royal Australasian College of Surgeons competencies[10]*

	Overall			Fellow			Trainee			Male			Female		
Competency	No. of responses	Mean (SD)	Median (IQR)	No. of responses	Mean (SD)	Median (IQR)	No. of responses	Mean (SD)	Median (IQR)	No. of responses	Mean (SD)	Median (IQR)	No. of responses	Mean (SD)	Median (IQR)
Medical expertise	5432	4.53 (0.59)	5 (1)	3573	4.59 (0.59)	5 (1)	1859	4.51 (0.59)	5 (1)	4506	4.51 (0.59)	5 (1)	926	4.59 (0.56)	5 (1)
Judgement and decision making	5414	4.40 (0.61)	4 (1)	3561	4.39 (0.62)	4 (1)	1853	4.42 (0.59)	4 (1)	4489	4.39 (0.61)	4 (1)	925	4.48 (0.59)	5 (1)
Health advocacy	5423	4.24 (0.75)	4 (1)	3567	4.24 (0.76)	4 (1)	1856	4.23 (0.72)	4 (1)	4499	4.22 (0.76)	4 (1)	924	4.43 (0.70)	4 (1)
Technical expertise	5418	4.57 (0.58)	5 (1)	3561	4.57 (0.59)	5 (1)	1857	4.57 (0.56)	5 (1)	4492	4.56 (0.59)	5 (1)	926	4.63 (0.54)	5 (1)
Professionalism	5427	4.54 (0.62)	5 (1)	3573	4.55 (0.62)	5 (1)	1854	4.53 (0.61)	5 (1)	4508	4.53 (0.62)	5 (1)	919	4.57 (0.61)	5 (1)
Communication	5413	4.55 (0.55)	5 (1)	3560	4.56 (0.55)	5 (1)	1853	4.54 (0.54)	5 (1)	4490	4.53 (0.55)	5 (1)	923	4.64 (0.51)	5 (1)
Collaboration and teamwork	5423	4.41 (0.61)	4 (1)	3567	4.38 (0.62)	4 (1)	1856	4.46 (0.59)	5 (1)	4498	4.38 (0.62)	4 (1)	925	4.54 (0.56)	5 (1)
Management and leadership	5418	4.34 (0.67)	4 (1)	3565	4.33 (0.68)	4 (1)	1853	4.35 (0.64)	4 (1)	4495	4.33 (0.67)	4 (1)	923	4.41 (0.63)	4 (1)
Scholarship and teaching	5418	4.39 (0.62)	4 (1)	3566	4.39 (0.62)	4 (1)	1852	4.38 (0.62)	4 (1)	4494	4.39 (0.62)	4 (1)	924	4.40 (0.62)	4 (1)
Total	48 786	4.44 (0.63)	5 (1)	32 093	4.44 (0.64)	5 (1)	16 693	4.44 (0.62)	5 (1)	40 471	4.43 (0.64)	5 (1)	8315	4.51 (0.60)	5 (1)

IQR = interquartile range. * 5-point Likert scale: 1 = not at all important, 2 = not important, 3 = somewhat important, 4 = important, 5 = very important. ◆

Results

In total, 1834 of 3054 questionnaires were returned (60%): 1204 of 1832 Fellows (66%) and 630 of 1222 trainees (52%); 1521 of 2566 (59%) male and 313 of 488 (64%) female trainees and Fellows. Seven hundred and nine (39%) responses were from general surgery Fellows and trainees and 357 (19%) were from orthopaedic surgery Fellows and trainees, the largest two of the nine surgical specialties.

The results were skewed to the more important. This was confirmed by tests for both skewness and kurtosis, both of which were evident to a high degree. Testing of reliability was undertaken, with a resultant Cronbach α value of 0.971.

The 27 attributes identified by the RACS were all graded as individual attributes (Box 2) or grouped as competencies (Appendix 1). They were all regarded as important to very important, except for responding to community and cultural needs. The top five attributes shared a sense of strong individualism, with an emphasis on being able to communicate effectively. However, there was a clear gap to the more lowly ranked attributes, particularly responding to community and cultural needs, and supporting others.

We calculated differences in the mean ranking of importance for the 27 attributes (Box 2, Appendix 2, Appendix 3). The overall mean was 4.44 (4 = important, 5 = very important). There was a small but significant difference between genders, with women regarding the overall group of attributes as more important than did men (mean, 4.51 [SD, 0.37] v 4.43 [SD 0.37]; $P = 0.001$) There was no statistically significant difference between Fellows and trainees for the overall group of attributes (mean, 4.44 [SD, 0.41] v 4.44 [SD, 0.40], respectively; $P = 0.99$).

Competencies were ranked by priority for Fellows and trainees, and for males and females (Box 3). There was consistency in the top three priorities for Fellows and trainees overall, and for male Fellows and trainees, where technical expertise, communication and professionalism were prioritised. For female Fellows and trainees, the top three priorities were communication, technical expertise and medical expertise. The lowest priorities across all groups were health advocacy, management and leadership, and scholarship and teaching.

Among individual attributes, there were statistically significant differences in perceived importance at the subgroup level (Appendix 2). In comparing Fellows and trainees, the four attributes with statistically more significant differences were caring and compassion, documenting and exchanging information, setting and maintaining standards, and responding to community and cultural needs. In particular, trainees identified as more important the three attributes for collaboration and teamwork (teamwork, documenting and exchanging information, and establishing a shared understanding).

In our analysis by gender, female trainees and Fellows ranked all attributes as more important than did male trainees and Fellows. Statistical significance was most noted for teamwork, meeting patient, carer and family needs, documenting and exchanging information, establishing a shared understanding, and communicating effectively (Appendix 3).

Although the first nine factors identified through multivariate analysis accounted for 58.8% of the total variation in the data, further analysis did not demonstrate strong grouping to the nine categories. Indeed, the covariance values of six attributes exceeded 1.0, suggesting some overlap between the groupings. Also, as the Cronbach α value was high at 0.971, some redundancy in the items was indicated statistically.

Discussion

Our study looked at the breadth of professionalism among surgeons and surgical trainees by exploring the nine competencies defined by the RACS. Our findings confirmed a clear priority ranking for these competencies and their attributes.

All competencies were regarded as important; however, there were statistically significant differences between the nine competencies and 27 attributes. Although the multivariate analysis did not confirm the independent nature of these variables, there was a clear gap between the prioritised importance of technical expertise, communication, professionalism and medical expertise compared with health advocacy, and management and leadership. Our findings suggest an emphasis on individual skills rather than on achieving a common goal. Attributes relating more to society at large were prioritised less than individualised skills. Also important was the strong similarity between the responses of the trainees and Fellows who undertake educational roles on behalf of the RACS. This may indicate the socialisation of aspirations between trainees and their mentors and educators.

Similar studies have emphasised that values held in high regard by society, such as altruism, charity and communication, are not well appreciated.[6,13] Another study, which also found that none of the factors of professionalism were regarded as unimportant, argued that this added little to the broader issue of the teaching of professionalism.[14] However, we contend that the prioritisation does make a difference. In a conflicted and time-pressured professional existence, a higher priority will receive attention for training and learning compared with a lower priority. The nine competencies defined by the RACS reflect what every patient needs from a competent surgeon.[11] Surgeons require expertise in each of these competencies, but it is the integration of all these attributes that will make a competent surgeon. In a health environment where collaboration and teamwork is regarded increasingly as a core skill, and where the ability to influence the health system through management, leadership and advocacy is becoming more desirable, these areas will require greater prioritisation among trainees and Fellows.

Skills such as teamwork and responding to the needs of the community involve complex interactions beyond individual excellence. Medical professionalism does not take place in a vacuum. It is situated within a social context and larger systems such as the education and health sectors, the national economy and broader international influences.[8] The practice of medicine needs to be rethought more broadly.

Our study had some limitations. Surveys are limited in the information they provide. The study confirmed the importance of the attributes and their relative priorities but not the statistical independence of the nine competencies. Further qualitative studies are required to obtain greater clarity between the attributes.

With the exception of responding to community and cultural needs, we found that all RACS competencies and attributes were regarded as important. The priorities showed consistency across Fellows, trainees and genders, although there were some key statistically significant differences between the attributes. This may highlight gaps that need to be addressed in selection of trainees, in current surgical training and in ongoing professional development for surgeons. Certainly these areas need to be addressed urgently.[5] Attributes, behaviours, judgement and skills are displayed as our professionalism in a complex and pressured working environment that demands prioritisation of activities. These priorities are also reflected in how trainees allocate their time, through the mentors they admire and the aspirations they develop. Professionally, well-rounded and truly competent surgeons are not a static phenomenon. We live in a complex world. The implications are clear: aspiring surgeons are likely to invest more in the development of competencies that they perceive as more important.[15] Competencies that are not reinforced by educators, mentors, trainers and the broader peer group are more likely to be neglected, with possible detriment to clinical practice.[16]

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