



# INTERNATIONAL JOURNAL OF CLINICAL SKILLS



**A Peer Reviewed International Journal for the Advancement of Clinical Skills**  
- *'docendo ac discendo' - 'by teaching and learning'*



In this issue:

When are bowel sounds most reliable in the diagnosis of small bowel obstruction?

Teaching professionalism in the medical program

A reliable way to clinically assess for compartment syndrome in the leg

# Foreword

**Welcome to the latest edition of the International Journal of Clinical Skills (IJOCS), Volume 6, Issue 1, November 2012.**

A research group in Saskatchewan, Canada discuss whether bowel sounds are reliable in the diagnosis of small bowel obstruction. Their evidence suggests that the auscultation of bowel sounds alone does not appear to be reliable in diagnosing this condition, presenting some interesting research data. Their work emphasizes one of the most important aspects of medical diagnosis – that 'each physical sign is only a portion of the bigger picture'.

Some of our educational colleagues in Melbourne, Australia have conducted research regarding some of the most fundamental issues in medical practice: professionalism and ethics. They have focused on enhancing the understanding of current teachings of professionalism and ethics. Their research will no doubt aid better preparation of future graduates for a truly ethical and professionally rewarding career.

Mr Alun Yewlett and his orthopaedic team, Swansea, United Kingdom, discuss compartment syndrome – a clinical diagnosis which causes significant morbidity if not recognised and treated promptly. The authors present a clinical method for helping clinicians diagnose this potentially limb and life threatening condition. Could this be a significantly reliable method to allow an evolving compartment syndrome to be recognised early in its natural history?

This issue also includes a review of Alasdair K. B. Ruthven's book 'Essential Examination'. The aim of this book is to provide easy access to the key points of clinical examination for senior medical students and junior doctors. Professor Jean Ker (Professor of Medical Education, University of Dundee, Scotland) gives her expert analysis of what the book provides for its readers.

As always, your feedback is invaluable for the continued development of the International Journal of Clinical Skills – the only peer reviewed international journal devoted to clinical skills (e-mail: [feedback@ijocs.org](mailto:feedback@ijocs.org)).

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# Teaching professionalism in the medical program

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## Abstract

Professionalism and ethics are critical issues in medical practice. This study was undertaken to evaluate how final year Pre-Internship (PrInt) medical students value the 'Professional and Personal Development' (PPD) teaching component of the current medical (MB BS) program at Sydney Medical School, Australia.

We used a combination of a questionnaire (using both rating scales and open ended questions) and a focus group discussion to evaluate student perceptions of how well the PPD program prepared them for clinical work with patients.

Students felt that teaching of professionalism was important and valuable. Students valued teaching by clinicians, interactive sessions, and both bedside tutorials and simulated scenarios dealing with real ethical issues. However, students felt writing essays, maintaining portfolios, and internet-based teaching were of least value.

The results of this study enhance our understanding of current teaching of professionalism. Addressing the issues raised by senior students will enable us to better prepare future graduates for a truly ethical and professionally rewarding career in medicine.

## Introduction

While teaching of medical professionalism is unquestionably a crucial part of the medical curriculum, it remains a challenge, both with regard to its content and the logistics of delivery. 'Professional and Personal Development' (PPD) learning activities are vertically integrated across all years of the Sydney Medical School (Australia) program (a postgraduate-entry four year course). Methods of delivery include large group lectures, small group face-to-face interactive tutorials, intensive (1-2 days) courses, and internet-based teaching. There is also opportunistic, informal teaching of professional issues by clinicians during bedside tutorials (communication and physical examination skills), during procedural skills tutorials, and during clinical attachments in years 3 and 4 of the program. There are formative and summative assessments via essays, assignments and portfolios.

The central themes of the PPD curriculum are:

- Patient-centred care and dealing with medical errors
- Medical humanities and professionalism
- Managing personal stress and work / life / career balance
- Medical ethics in practice

The PPD curriculum is delivered by both clinical and non-clinical academic staff with various levels of experience.

The recently published document "First Evaluation of the Sydney



Medical Program Report" [1] found that the new PPD course was well received by students in the first year. However, there has been no evaluation of the program by senior students. Such evaluation is an important step to further enhance our understanding and to improve the quality of PPD teaching.

## Aim

The purpose of this study was to investigate senior medical students' perceptions of the value of the PPD teaching in preparing them for internship, both in regard to content and mode of delivery during the four year medical course. Teaching methods, curriculum content, teacher characteristics and mentorship were investigated.

## Methods

Quantitative and qualitative methods were used in the collection and analysis of data. Quantitative data was collected using survey questionnaires. Rating scales assessed the usefulness of teaching methods, curriculum content, mentorship, and teacher characteristics (range 1 to 5: 1 = not at all useful, 2 = slightly, 3 = moderately, 4 = significantly, 5 = entirely useful). We arbitrarily decided that values higher than 3.0 represented a student's perception of a valuable experience. Open-ended questions examined which aspects of the program were most useful, and which were least useful. Participants were invited to attend a focus group discussion (n = 5).

The quantitative data was assessed using the mean, standard deviation and confidence interval (CI 95%).

The study was approved by Ethics Committee of the University of Sydney (approval number 11-2009/12230).

## Results

33 students from a group of 44 final year Pre-Internship (PrInt) medical students answered the questionnaires, a response rate of 75%.

The overall usefulness of the PPD course in preparation for clinical work was assessed as moderate (mean score 3.15, 95% Confidence Interval 2.83 to 3.47).

### Teaching Methods

Students rated interactive workshops as the most useful method (mean 3.70, CI 95% 3.37 - 4.01), lectures and an intensive PPD PrInt course as moderately useful (mean 3.3, CI 95% 2.99 - 3.61 and mean 3.24, CI 95% 2.83 - 3.65 respectively), while PPD portfolios and e-learning were assessed as less useful (mean 2.42, CI 95% 2.03 - 2.81 and mean 2.61, CI 95% 2.25 - 2.95 respectively) – Figure 1 (Page 8) and Table 1.

The difference between the perceived usefulness of interactive workshops versus PPD portfolios was statistically significant ( $p < 0.05$ ).

These findings were supported by focus group discussion, in which one student commented that essays and assignments "paid lip service" to the true appreciation of the ethical issues.

The interactive workshops, bedside tutorials, open forums with simulated patients / actors, and experimental methods (such as reading of paintings) were rated highly by students at the focus group.

Table 1: Means, standard deviations (STD) and confidence intervals (CI 95%) of student ratings regarding teaching methods

	Overall	Portfolios	Lectures	Workshops	eLearning	Intensive PrInt
MEAN	3.15	2.42	3.30	3.70	2.61	3.24
STD	0.94	0.87	0.92	0.95	1.03	1.20
CI 95%	2.83 - 3.47	2.12 - 2.72	2.99 - 3.61	3.38 - 4.02	2.26 - 2.96	2.83 - 3.65

### Content

Dealing with medical errors and basic patient safety concepts were the areas rated as most useful (mean score 3.8, CI 95% 3.54 - 3.98 and mean 3.76, CI 95% 3.54 - 3.98 respectively). Managing personal stress and work / life / career balance were perceived by the majority of students as least useful (mean 3.18, CI 95% 2.70 - 3.56) – Figure 2 (Page 8) and Table 2. However, none of these differences were statistically significant. Students in the focus group highlighted the importance of recognising early "red flags" / warning signs of depression and work overload among doctors, and felt this should be an obligatory part of every PPD curriculum.

### Mentorship

While only 15% of PrInt students reported having a mentor during their medical course, all of these students noted that having a mentor significantly contributed to the shaping of their professional attitudes. Interestingly, students who had mentors assessed the PPD course higher (mean 3.8, CI 95% 3.4 - 4.2) with regard to its overall usefulness, compared to students, who had no mentor during their course of studies (mean 3.0, CI 95% 2.7 - 3.3,  $p < 0.05$ ). This result was statistically significant despite the small sample numbers.

### Teachers

97% of students thought that clinicians should be teaching professionalism, and 64% thought that medical ethicists would be good teachers, but only 30% agreed that non-clinicians should be involved in this teaching. Focus group students stressed the importance of teachers' interest and enthusiasm as well as broad clinical experience (such as general practitioners) when delivering PPD curriculum.

### NSW Medical Board guidelines

94% of students were aware of the existence of a "Code of Professional Conduct" publication edited by the NSW Medical Board (Australia), and thought the document played a "moderate" role in providing them with a better understanding of professional values.

## Discussion

While there is no doubt there is a need to promote the professional development of medical students, the methods of teaching professionalism remain controversial [2 – 6]. The results of our questionnaires and of the focus group confirmed that while the students found teaching of professionalism important and valuable, some methods of teaching and content were more beneficial than others. The majority of our students believed that interactive sessions with clinicians, at the bedside or in simulated conditions based on real life scenarios, were most useful in teaching professionalism during the course. The least satisfaction and least valuable aspects were "dry" internet-based teaching, and writing essays and assignments for their PPD portfolios, which were seen as distant from real issues and attitudes. Our results contrast with a previous study by Gordon in 2003, which found a positive evaluation of the use of portfolios as an assessment and developmental tool to foster professionalism [7].

Figure 1: Mean student ratings regarding teaching methods

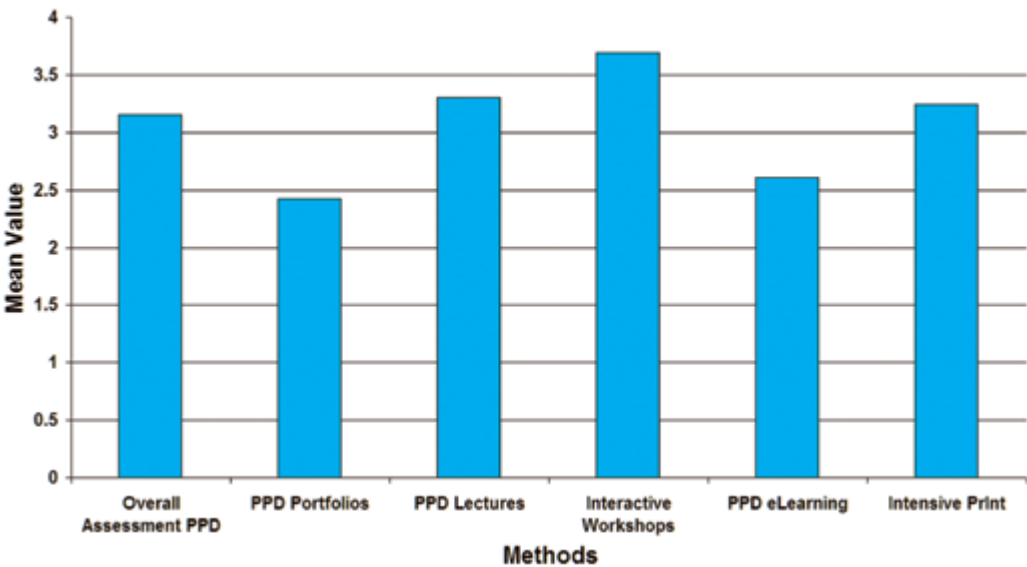


Figure 2: Mean student ratings regarding teaching content

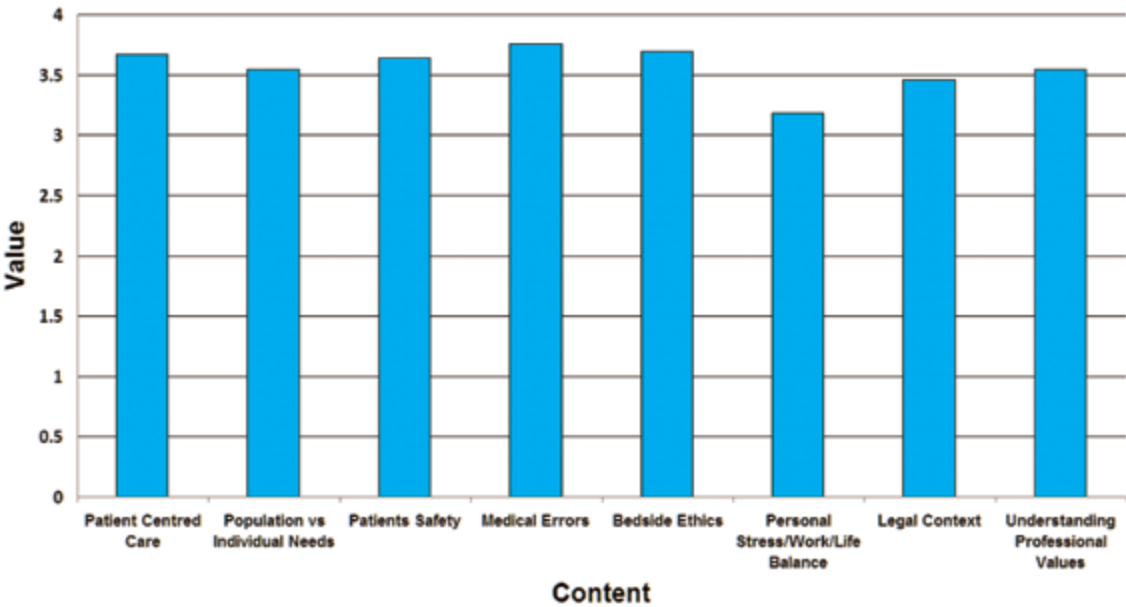


Table 2: Means, standard deviations (STD) and confidence intervals (CI 95%) of student ratings regarding teaching content

	Patient centred care	Population versus Individual	Patient's safety	Medical errors	Bedside ethics	Stress work / life balance	Legal issues	Professional values
MEAN	3.67	3.55	3.64	3.76	3.70	3.18	3.45	3.55
STD	0.74	0.87	0.78	0.66	0.85	1.10	0.87	0.79
CI 95%	3.42-3.92	3.25-3.85	3.37-3.91	3.53-3.99	3.41-3.99	2.80-3.56	3.15-3.75	3.28-3.82

There is a broad consensus amongst medical educators that formal teaching of medical professionalism is of crucial importance in preparing medical students for their professional career [2 – 6, 8]. The traditional patient-doctor relationship has been progressively eroded by bureaucracy, litigation, “corporatization” of health services, and the growing computerisation of medicine. There is a perception of a widening gap between the charitable passion of healing and the business contract with a customer [3]. The higher scores on assertiveness, narcissistic traits, and high expectations in today’s generation of students (“Generation Me”) may

further weaken the principled patient-doctor covenant [8].

There is general agreement on the ideal content of PPD teaching, namely that “virtues of medical professionalism” (VMP) should occupy the central part of the curriculum [2, 3]. These are: fidelity to trust, benevolence, compassion, intellectual honesty, courage and truthfulness.

The recently published document “First Evaluation of the Sydney Medical Program Report” [1] showed that the new PPD course was well received by year 1 students with very positive support

for most areas of their training. Students reported gaining new perspectives on the importance of communication, the patient's perspective, and the importance of family support.

More than 80% of year 1 medical and 70% of year 1 dental students agreed that the course had fulfilled five aspects:

- Better understanding of population versus individual health practice
- Maintenance of personal health and where to seek self help
- Application of bedside ethics
- The legal context of healthcare
- Basic concepts of patient safety

In contrast to this early assessment, our study was performed at the very end of the medical program. These students are now interns and are an integral part of a clinical team where they are responsible for many independent decisions. Our study showed that these senior students felt that the current PPD teaching prepared them 'moderately' well for their clinical work.

There is consensus about the value of role models for the compassionate and ethical care of patients in teaching medical professionalism. Some educators believe that medical professionalism education should be carried out by medical ethicists [2]. However, our results support the view that the teaching of professionalism is best performed by clinicians; medical ethicists were also accepted, but were a less preferable choice, and only a minority of students accepted teaching by non-clinicians. Our focus group students stressed the importance of broad clinical experience, enthusiasm and interest in the ethical issues in the tutors delivering the curriculum. Further, they felt that general practitioners were particularly suitable for that role.

Only 15% of the students in our study had a mentor during their course. Interestingly, our results indicate that having a mentor increased not only students' awareness of the professional issues, but also overall satisfaction with the PPD teaching.

A document recently published by the Australian Medical Council, "Good Medical Practice: A Code of Professional Conduct" [9], sets out the principles and standards of ethics and professionalism, which we expect of all practicing clinicians in Australia. According to the results of our study the "Code of Professional Conduct" publication only moderately added to students' appreciation of the professional issues at the end of the course.

Our study has several limitations. These include a relatively small cohort size (44 students, 75% participation rate). In addition, we arbitrarily decided that a score above 3 reflected student's perception of a "valuable" experience (using a Likert scale from 1 to 5). Despite controversies on the use of Likert scales in medical research, our statistical analysis of scores was supported by recently published guidelines by Carifio and Perla [10].

## Conclusion

The results of this study enhance our understanding of the teaching of professionalism. Overall, students found PPD teaching to be valuable in preparing them for their clinical work. Of most value were interactive face-to-face teaching sessions, having a mentor over the course of their studies, and being taught by clinicians with broad professional experience. Student-driven changes to the PPD curriculum will allow us to better prepare graduates for a truly ethical and professionally rewarding career in medicine.

## References

1. Evaluation Unit, Office of Medical Education Sydney Medical School. (2009). First Evaluation of the Sydney Medical Program Report.
2. Buyx A M, Maxwell B, Schöne-Seifert B. (2008). Challenges of educating for medical professionalism: who should step up to the line? *Medical Education*. **42**(8):758-764.
3. Cutillo B. (2000). Teaching professionalism to medical students. *Journal of the American Medical Association*. **283**(2):197-198.
4. Goulston K J, Oates R K. (2008). Changes to the University of Sydney medical curriculum. *The Medical Journal of Australia*. **188**(8):461-463.
5. Hilton S, Southgate L. (2007). Professionalism in medical education. *Teaching and Teacher Education*. **23**(3):265-279.
6. Runciman B, Merry A, Walton M. (2007). *Safety and ethics in health care: a guide to getting it right*. London, Ashgate Publishing.
7. Gordon J. (2003). Assessing students' personal and professional development using portfolios and interviews. *Medical Education*. **37**(4):335-340.
8. Twenge J M. (2009). Generational changes and their impact in the classroom: teaching Generation Me. *Medical Education*. **43**(5):398-405.
9. NSW Medical Board, Australia. (2008). *Code of Professional Conduct. Good medical practice*.
10. Carifio J, Perla R. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical education*. **42**(12):1150-1152.





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