



SPECIAL ARTICLE

A Long-Term, Sustainable, Inclusive, International Model for Facilitating Junior Doctor and Medical Student-led Publishing

Zeshan Qureshi BM MSc BSc (Hons)¹, Mark A Rodrigues BSc (Hons) MBChB (Hons)², Katherine Lattey MRes³, Ceen-Ming Tang BA (Hons) MedSci⁴, Madelaine Gimzewska BSc(Hons) MBChB⁵, Christopher Gee MBChB MSc MRCSEd⁶, Michael Ross BSc, MBChB, DRCOG, MRCGP, EdD⁷, Patrick Byrne BMedSci, MB BCh BAO, DCH, DRCOG, MRCGP, MRCSEd, FRCP Edin.⁸, Emily Hotton MBChB, BSc(Hons)⁹, Tobias Hunt BM MRCPC¹⁰, James Andrew BM¹¹, Matthew Wood BM¹², Simon Maxwell MD PhD FRCP FRCPE FBPharmacolS FHEA¹³.

¹Academic Clinical Fellow (International Child Health), Great Ormond Street and Institute of Child Health, London, UK; Honorary Clinical Tutor, University of Edinburgh, Edinburgh, UK

²Radiology Registrar, Royal Infirmary of Edinburgh, UK; Clinical Tutor Associate, University of Edinburgh, Edinburgh, UK

³Medical Student, Brighton and Sussex Medical School, Brighton, UK

⁴Medical Student, University of Oxford, Oxford, UK

⁵Foundation Doctor, Frimley Park Hospital, Surrey, UK

⁶Trauma and Orthopaedics Registrar, St Richard's Hospital, Chichester, UK

⁷Senior Clinical Lecturer, Centre for Medical Education, University of Edinburgh, UK; Co-Editor-in-Chief: The Clinical Teacher.

⁸Consultant Physician & GP, Belford Hospital, Fort William, UK.

⁹Foundation Doctor, Royal United Hospital, Bath, UK

¹⁰Paediatrics Registrar, Royal Alexandra Children's Hospital, Brighton, UK

¹¹Renal Registrar and Teaching Fellow, Northern Deanery, UK

¹²Obstetrics and Gynaecology Registrar, Birmingham Women's Hospital, Birmingham, UK

¹³Professor of Student Learning, Clinical Pharmacology Unit, University of Edinburgh, Clinical Research Centre, Western General Hospital, Edinburgh, UK

Correspondence Email: Zeshan.u.qureshi@gmail.com

Abstract

Medical student textbooks are traditionally written by senior clinicians, with little if any input from medical students or junior doctors (“juniors”). However, juniors have been shown to be effective educators in various teaching settings. They have a good appreciation of the learning needs and styles of contemporary students. We hypothesized such benefits of junior-led teaching could be successfully applied to medical textbooks.

This article describes the *Unofficial Guide to Medicine* project, a novel, junior-led approach to textbook writing. We discuss the process from the recruitment of juniors through to the final publication of a textbook, comparing and contrasting our approach with more traditional publishing models. The specific roles juniors perform and their potential progression from junior reviewer to editor is explained, as is the collaboration with senior clinicians. Juniors not only lead the process of writing, but also editing, graphic design, and print review. The use of social media to gain feedback from a large cohort of juniors during the book writing process and the positive effects this has on the development of titles is highlighted, as are the potential difficulties this dynamic writing model produces.

We finish by looking at feedback from the published titles from the series, discussing the benefits to those juniors who participate and describe how you can get involved.

Copyright Royal Medical Society. All rights reserved. The copyright is retained by the author and the Royal Medical Society, except where explicitly otherwise stated. Scans have been produced by the Digital Imaging Unit at Edinburgh University Library. Res Medica is supported by the University of Edinburgh's Journal Hosting Service: <http://journals.ed.ac.uk>

ISSN: 2051-7580 (Online) ISBN: 0482-3206 (Print)

Res Medica is published by the Royal Medical Society, 5/5 Bristo Square, Edinburgh, EH8 9AL

Res Medica, 2014, 22(1): 143-152.

doi:10.2218/resmedica.v22i1.1124

A Long-Term, Sustainable, Inclusive, International Model for Facilitating Junior Doctors and Medical Student-led Publishing.

Introduction

Medical textbooks are predominantly written by senior clinicians with a vast wealth of experience in both delivering teaching and practising medicine. This model has been very successful, but arguably has left the potential contribution of “juniors” (medical students and junior doctors) untapped. There is evidence in the literature suggesting that juniors can be effective medical teachers.^{1,2} They are able to use their recent experience of being learners to relate to current students. This experience can help such teachers identify and address the changing learning needs of students.

Several small studies have suggested that junior-led teaching is effective, even when being compared with that delivered by more senior staff.^{3,4} It may have advantages such as the approachability of the tutors and their enthusiasm and drive to organize and deliver teaching.⁵ However, such research has not been conducted in the field of medical textbook writing, and juniors have had a relatively small role as textbook authors until recently. We hypothesized that similar advantages of junior-led teaching may apply to textbook writing.

The *Unofficial Guide to Medicine* project was conceived as a new approach to developing and publishing textbooks for medical students that put juniors at the forefront of every aspect of the publishing company. The textbooks were not designed to be used in isolation, but rather to complement the core medical school curriculum and senior doctor-led teaching.

We also envisaged wider benefits to writers, such as the opportunity to consolidate medical knowledge and to develop the skills in authoring, editing, and writing that are not formally taught as part of many standard medical school curricula.

The first textbook in the series, *The Unofficial Guide to Passing OSCEs*, has been distributed to approximately 8000 people in 40 countries.⁶ It involved 37 juniors as authors, editors, and reviewers, with 38 experts involved to ensure factual integrity (as will be explained in the publishing model later in this article). Three further titles have now been released, with another 8 in development, involving a worldwide team of over 100 juniors as authors, editors, and reviewers.

This article describes the unique approach taken to developing these textbooks and compares and contrasts it to the experience of working with more standard publishing models.

The process of recruiting juniors

The first key point about this project is that it is potentially open to any juniors who want to participate. We do not ask for a curriculum vitae or an application form, just that interested juniors contact the publishing group via email or our social media (Facebook) group. All interested juniors are then invited to offer feedback on current and possible future textbooks. This allows an initial measure of their level of commitment and ability to contribute.

Many individuals do not respond to this invitation and have no further involvement in the project. However, those that do respond and show enthusiasm, organization, and hard work, progress to a junior reviewer level for material in a new textbook. This allows firstly for a formal role to be taken, but secondly and more importantly, allows for an initial insight into the textbook production process, akin to an apprenticeship. Each junior works closely with the editor to ensure that material in the textbook is relevant to and expressed in a manner that is easily understandable by current juniors.

Subsequently, junior reviewers may progress to become authors and are provided with templates to facilitate drafting short sections of textbook chapters. Editors provide feedback on their performance, and authors who show promise are offered the opportunity to co-edit a subsequent

textbook. This involves developing a textbook idea and structure, coordinating its development, and, unlike traditional publishing models, being involved in the graphic design, proof reading, and print review of the book (Figure 2).

This process allows rapid progression of committed and competent juniors, even though they typically have no previous textbook writing experience. To date, 4 medical students have progressed from reviewers to editors in less than a year.

Collaboration with senior clinicians

Although juniors who have passed or are revising for relevant medical exams may well have a sufficient level of understanding to teach certain topics to more junior peers, we very much recognize the value of expert input. Through acquired clinical acumen and experience as medical educators, established clinicians have a depth of understanding that cannot be underestimated.

The challenge in producing these textbooks was therefore to allow material to be created from the junior perspective while also involving the senior staff. We addressed this by asking seniors to approve the factual accuracy of the text at multiple stages of the production process rather than inviting them to write any of the content of the textbooks (Figure 2). This allows for the final product to be in the language of juniors but with a

similar clinical accuracy to the work of more senior staff.

Collaboration with juniors

In most medical textbooks, there is a clear distinction between author and reader. Authors are typically senior clinicians who impart their wisdom, while readers are much junior learners. Any feedback from the readers is almost always gathered after publication and there is usually a long interval until the next edition is published. In contrast, the textbooks in our model benefit considerably from junior input at multiple stages, with the content and design adjusted before publication until the desired outcome is reached.

Our publishing model permits a more dynamic writing process through close collaboration with juniors (Figure 2). We give juniors the option of being involved in every aspect of the development process, from suggesting new titles to reviewing content lists and graphic design and approving the final printed text prior to release. Our Facebook page, “The Unofficial Guide to Medicine”

(<http://www.facebook.com/TheUnofficialGuideToMedicine>), allows juniors to provide feedback through social media, and it currently has over 19 800 members (accessed 23 July 14). We have found that social media permits close interaction with a diverse student community, which in previous generations

would have been much more difficult to achieve. Another route for feedback has been through local medical student societies, who have been active in identifying student learning needs.

This input from a large cohort of students at various stages of the book writing process allows readers to influence and engage with the development of each textbook which, through an iterative process (see Figure 2), can lead to dramatic changes. For example, following the review of proposed contents for a new radiology textbook by members of the Facebook group an additional 5 chapters were incorporated before the book went to press. We responded to the specific needs of the community. It is sometimes hard to identify which needs are not met until the textbook is near completion and, therefore, the feedback process is an ongoing iterative process and, again, quite different to traditional publishing models.

Key differences in involving juniors as the lead writers

There are advantages and disadvantages to any publishing methods, and we have highlighted a few of the most pertinent to junior-led textbooks (Table 1). We believe the most important distinction between junior- and senior-led textbooks is that the former are more likely to reflect students’ learning needs. This comes not only in terms of content, but also in terms of style and design.

Table 1. Possible advantages and disadvantages of junior-led teaching

Potential advantages of juniors	Potential disadvantages of juniors
<i>Awareness of current curricula and expectations:</i> having recently gone through, or currently studying for medical school examinations, juniors are aware of the latest expectations of them as medical students. Though many senior staff are involved in curriculum delivery and design, those that are not may not be aware of current expectations.	<i>Limitation of knowledge:</i> juniors do not have the same depth of knowledge and experience as senior clinicians. This may reduce the reliability of any output, for example explanations may be oversimplified or inaccurate. Therefore senior involvement is crucial to any junior-led publication.
<i>Focus on clinically relevant and exam-relevant material:</i> it could be argued that juniors are more likely to focus away from the minutiae of a subject and instead focus on both broader concepts and practical instructions on how to address the day-to-day challenges that the junior doctor is already facing.	<i>Focus on exam relevant material:</i> there is a risk that juniors may fixate on material needed to passing exams and neglect some areas relevant to clinical practice that may be less frequently assessed or more difficult to assess.
<i>Awareness of learning styles of current students:</i> teaching at medical school has changed dramatically in the last few decades, particularly with the decline of bedside teaching and the increased use of simulation and e-learning strategies. Juniors, currently or recently experiencing these learning modalities, may be more aware of the relative function of books, social media, and other online learning to the current student and, therefore, cater their content for this.	<i>Difficulty in writing sections:</i> juniors with little experience in medical education and less confidence in the material may have to do a larger amount of research than senior clinicians and may also require several more drafts of their work to be viewed. This is why our model has intensive feedback for juniors from experts and experienced editors.
<i>Motivation:</i> juniors are a motivated, dynamic group, capable of significantly contributing to the medical textbook library. This resource is available to be utilized.	<i>Difficulty forecasting commitments:</i> for juniors who have not been involved in such large projects before, it may be difficult to accurately judge whether it is something they can take on, both from the individual's perspective and from the publisher's perspective. In our model, we ensure that all juniors take on a small role to start with, and develop an awareness of the expectations of them in more senior positions.
<i>Capacity for building a long-term relationship with the publisher:</i> by starting early in their career, juniors have the potential to develop their textbook writing skills at a far earlier stage than clinicians previously had. This may allow for a much greater contribution to the medical textbook literature. Further skills developed include editing, reviewing, and researching key topics relevant to their clinical practice.	<i>Established reputation:</i> senior doctors are more likely to directly run undergraduate courses and have influence over recommended reading lists. They may also potentially be considered a more authoritative voice by libraries, fellow academics, and medical students.
<i>Current engagement with textbooks:</i> juniors are more likely to currently be using or recently have used medical textbooks for educational purposes. Therefore they may be more able to identify gaps in the market and produce material to address this need.	<i>Ensuring work is original:</i> While both junior and senior staff will rely on research, juniors are likely more heavily reliant on it. There is a risk of potential plagiarism or use of unconsented patients or copyrighted images, which may not be completely apparent to juniors. Therefore plagiarism guidelines have to be made explicitly clear to authors.
<i>Recent learning experience:</i> juniors who have recently learned the knowledge they wish to impart, will be able to reflect on the steps they took to gaining it, and may have identified the difficulties they had obtaining it. When disseminating, they may be less likely to overestimate the intended readers' basic understanding, explaining concepts from the basic principles in language appropriate for the reader, gradually building to the required knowledge level.	

For example, our books intentionally use simple language and a friendly tone. We also incorporate high-quality images and clear signposting to facilitate navigation and recall.

Key differences in our publishing model compared with traditional approaches

Our approach is driven by juniors at every stage, with regular, thorough feedback to ensure the final product meets students' needs. We have been willing to continually improve the content of each book, providing it was a response to student needs or feedback from expert reviewers, even if it has meant significant changes, delayed publication, and increased cost.

This is arguably a more responsive approach than that taken by traditional publishing companies, where after the final submission of text, the input of authors and editors is more limited. The 2 approaches are summarized in Figure 1 (traditional model) and Figure 2 (our model).

Conversely, having such involvement has potentially negative effects. As mentioned already, publication may be delayed, costs increase, and writers may be given an additional last-minute workload, particularly when changes are made after the graphic design phase. However, some issues may only become apparent at late stages. For example, X-ray images may need to be adjusted as they might not have the correct appearance in the final print as a result of

subtle changes in shades of grey with the printing press. It is helpful for these to be considered by juniors writing the book, as non-specialists are less likely to be able to spot the differences.

Figure 1. Traditional Model of Publishing.

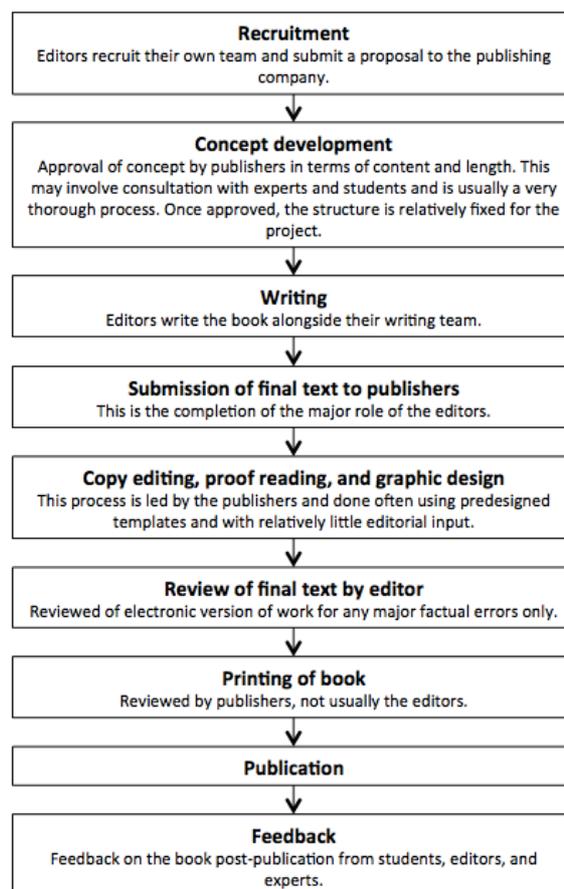
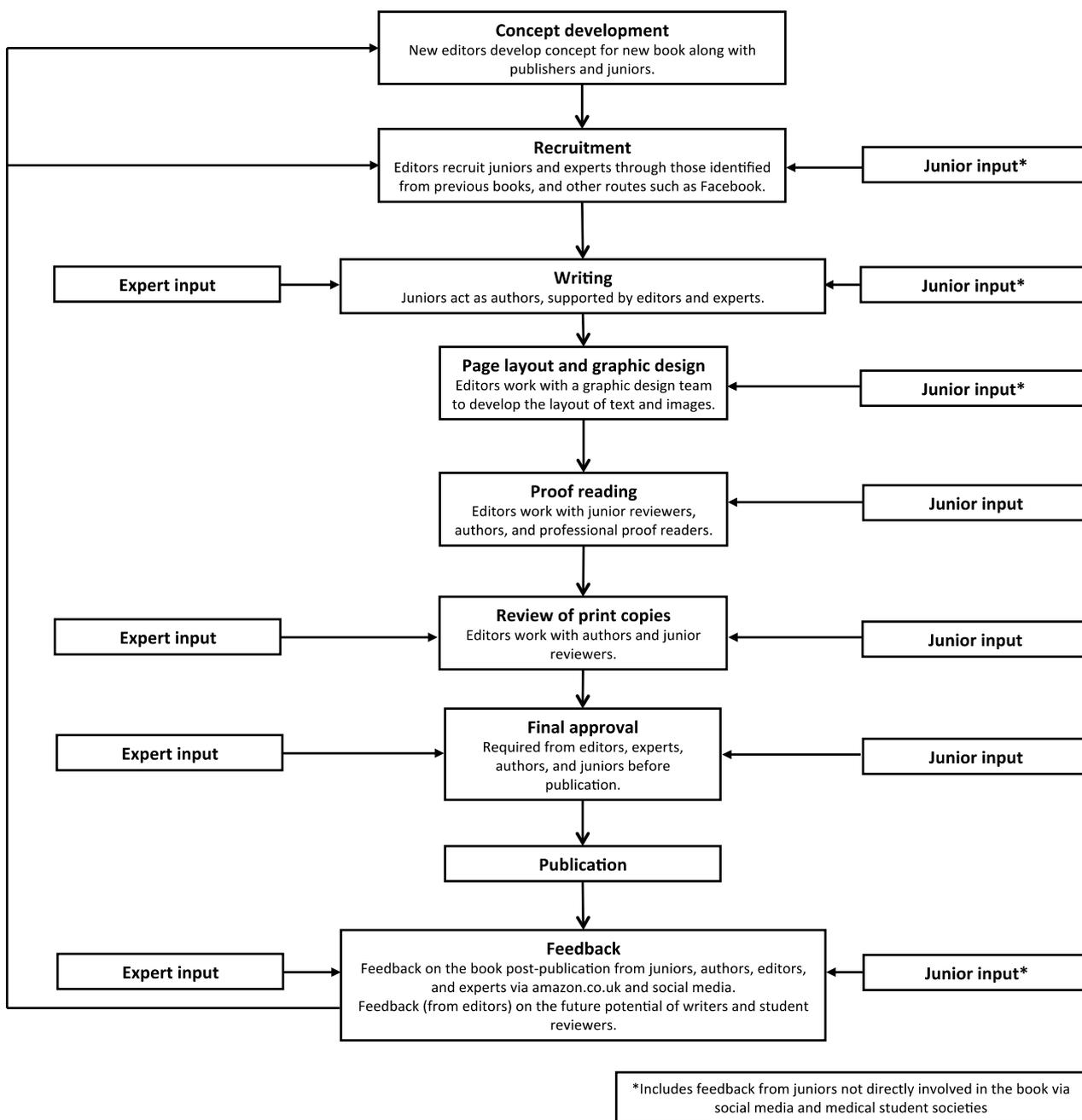


Figure 2. Our Model of Publishing



Direct evaluation

Readers of the first textbook, purchased on Amazon (amazon.co.uk), were invited to give the book a star rating on a 5-point Likert scale.⁷ Of 76 respondents, 93% rated the book 4 or 5 stars. Qualitative feedback was

largely very positive, with one student stating that the book was “formatted in a similar way to how most people make notes themselves – concise, bullet-pointed and logically ordered, so a great time-saver!”

Some criticisms were also received. For

example, one person responded: “it doesn’t go into enormous amounts of detail so it complements other textbooks, rather than being a stand-alone guide to clinical examination. Nevertheless it is a decent textbook that I will consult during the remainder of my undergraduate education”. This emphasizes the importance of such books being complementary to core medical teaching and other medical resources that

might be available.

Further evaluation is in progress and will examine in more detail the perception of junior-led textbooks from a medical student perspective, as well as effects on professional development for juniors participating in the project.

Four textbooks have been released so far, and these are summarized in Table 2

Table 2. Details of the 4 books released between March 2012 and April 2014.

Title	Description	Junior authors/ editors	Senior experts	Junior reviewers	Sample pages
<i>The Unofficial Guide to Passing OSCEs</i>	107 scenarios, covering medical history taking, clinical examination, practical skills, and communication skills.	27	38	9	http://tinyurl.com/UGTOSCEs
<i>The Unofficial Guide to OSCEs: Candidate Briefings, Patient Briefings and Mark Schemes</i>	Includes 92 role play scenarios, covering medical history taking, clinical examination, practical skills, and communication skills. Intended to provide information for a mock patient, a mock examiner, and the student in a practice examination.	8	1	1	http://tinyurl.com/UGTOSCEsRoleplay
<i>The Unofficial Guide to Practical Skills</i>	Includes 62 practical skills scenarios, covering basic patient assessments, blood tests, acute patient management, medication administration, medicine and surgery, urology, paediatrics, and general skills.	8	12	4	http://tinyurl.com/UGTPracticalSkills
<i>The Unofficial Guide to Radiology</i>	Systematic approach to chest, abdominal, and orthopaedic X-ray image interpretation, with 60 scenarios, including 300 multiple-choice questions and answers. Six additional chapters on the basic science behind X-ray imaging, computed tomography, magnetic resonance imaging, nuclear medicine, fluoroscopy, and ultrasound.	7	1	6	http://tinyurl.com/UGTRadiology

Benefits to juniors from participation

There is evidence in the literature that juniors can learn a great deal from teaching their peers or near-peers.^{5,8-9} No previous studies have explored what juniors might learn from participating in medical textbook writing but, in our experience, there is great potential for juniors to gain valuable experiences from participating in this. It gives them the opportunity to expand and consolidate existing knowledge. The writing process encourages juniors to develop editing, reviewing, and research skills that they may not have otherwise developed. Effective writing requires the ability to communicate thoughts in a clear and precise manner. It also requires good time management, prioritization, and commitment, and the structure of the publishing group gives juniors the opportunity to work in large, multidisciplinary teams that include non-medical professionals.

How you can get involved

Email unofficialguidetomedicine@gmail.com or join our Facebook page (<http://www.facebook.com/TheUnofficialGuideToMedicine>) to find out more. We welcome all medical students plus junior and senior doctors to get involved.

Conclusion

The time and the enthusiasm of juniors is an untapped resource for developing and diversifying the medical textbook library. This project has created an organization through which junior-led publishing can thrive, while ensuring accuracy is maintained with expert review. It has the capacity to expand, and we welcome juniors to approach us so that they can be part of the team.

Learning Points

What is known already

- Medical students and junior doctors (juniors) actively participate in delivering face-to-face teaching to medical students.
- Several studies have suggested that junior-led teaching is effective, even when compared with teaching by more senior staff. Juniors are considered to be approachable, enthusiastic, organized, and capable of delivering material that is relevant to medical students' learning needs in a language that relates to current student learning styles.
- Despite success in face-to-face teaching, traditionally juniors have played a minimal role in writing medical textbooks, with the process being dominated almost exclusively by senior clinicians.

What this article adds

- *The Unofficial Guide to Medicine* is a project that was conceived as a new approach to developing and publishing textbooks for medical students that put juniors at the forefront of every aspect of the publishing company.
- Juniors are not only capable of writing medical textbooks but also of leading the publication process, through proof reading, graphic design, copy editing, and print review.
- Social media can be used to engage with a large, diverse, international medical student audience in order to develop medical textbooks from the early stages of concept development to production, when the layout of the text and chapters are being developed. Our Facebook group has over 19 000 members who are consulted throughout the book production process.
- Junior-led medical textbooks are well received internationally, with around 15 000 sales across 40 countries since 2012.

References

1. Ross MT, Cameron HSC. Peer assisted learning: a planning and implementation framework: AMEE Guide 30. *Med Teach*. 2007 Sep;29(6):527-45. DOI: 10.1080/01421590701665886.
2. Qureshi Z, Ross MT, Maxwell S, Rodrigues M, Parisinos C, Hall HN. Developing junior doctor-delivered teaching. *Clin Teach*. 2013 Apr;10(2):118-23. DOI: 10.1111/j.1743-498X.2012.00622.x.
3. Weyrich P, Celebi N, Schrauth M, Möltner A, Lammerding-Köppel M, Nikendei C. Peer-assisted versus faculty staff-led skills laboratory training: a randomised controlled trial. *Med Educ*. 2009 Feb;43(2):113-20. DOI: 10.1111/j.1365-2923.2008.03252.x.
4. Qureshi Z, Seah M, Ross MT, Maxwell S. Centrally organised bedside teaching led by junior doctors. *Clin Teach*. 2013 Jun;10(3):141-5. DOI: 10.1111/j.1743-498X.2012.00625.x.
5. Qureshi ZU, Gibson KR, Ross MT, Maxwell S. Perceived tutor benefits of teaching near peers: insights from two near peer teaching programmes in South East Scotland. *Scott Med J*. 2013 Aug;58(3):188-92. DOI: 10.1177/0036933013496935.
6. Qureshi Z. *The Unofficial Guide to Passing OSCEs*. 3rd edition. London, UK: Zeshan Qureshi; 2012.
7. Amazon. *The Unofficial Guide to Passing OSCEs (Unofficial Guides to Medicine)*. Amazon website. <http://www.amazon.co.uk/Unofficial-Guide-Passing-Guides-Medicine/dp/0957149905> (accessed 26 May 2014).
8. Bargh JA, Schul Y. On the cognitive benefits of teaching. *J Educ Psychol*. 1980;72(5):593-604. DOI: 10.1037/0022-0663.72.5.593.
9. Ten Cate O, Durning S. Dimensions and psychology of peer teaching in medical education. *Med Teach*. 2007 Sep;29(6):546-52. DOI: 10.1080/01421590701583816.