J Anesth (2010) 24:807–810
DOI 10.1007/s00540-010-0973-7

SHORT COMMUNICATION

Facilitating the transition to practice: a weekend retreat curriculum for business-of-medicine education of United States anesthesiology residents

Elena J. Holak · Olga Kaslow · Paul S. Pagel

Received: 19 March 2010 / Accepted: 20 May 2010 / Published online: 19 June 2010

Abstract Anesthesiology residents in the United States (US) not only must develop the clinical skills needed to provide independent patient care, but also are required to become familiar with the business aspects of the modern health care system. Unfortunately, practice management education may be inadequate during anesthesiology residency training. The authors describe the design and implementation of a weekend retreat curriculum in business-of-medicine education for anesthesiology residents. Experts were recruited to discuss interviewing skills, contract law and negotiation, billing and reimbursement, insurance, malpractice, and financial planning. A strict lecture didactic format was avoided, and presentations were designed to encourage speaker–audience interaction. The program was relatively simple to design and implement, satisfied several Accreditation Council of Graduate Medical Education core competencies for US anesthesiology education, may be altered as practice management evolves, and may be adapted to accommodate the needs of programs in other countries.

Keywords ACGME core competencies · Anesthesiology education · Billing and coding · Contract law · Practice management

E. J. Holak · O. Kaslow · P. S. Pagel
Department of Anesthesiology,
The Medical College of Wisconsin,
Milwaukee, WI, USA

E. J. Holak · O. Kaslow · P. S. Pagel (✉)
The Anesthesia Service, Clement J. Zablocki Veterans Affairs Medical Center, 5000 W. National Avenue,
Milwaukee, WI 53295, USA
e-mail: pspagel@mcw.edu

United States (US) anesthesiology residents entering practice not only must develop the skills needed to provide safe patient care, but also must be familiar with the business aspects of modern health care [1, 2]. Most US anesthesiologists are not hospital, medical school, or government employees, but instead, are independent "contractors" who work in relatively small groups (private practice) to negotiate contracts for anesthesia services with hospitals and insurance companies. As a result of this arrangement, the US Accreditation Council for Graduate Medical Education (ACGME) Program Requirements for Anesthesiology direct that "practice management should be included in the curriculum, and should address issues such as operating room management, types of practice, job acquisition, financial planning, contract negotiations, billing arrangements, professional liability, and legislative and regulatory issues" [3]. The clear requirement for practice management education is a ubiquitous feature of all ACGME-accredited residency programs, but educational deficiencies in business training are routinely identified in US residents across medical specialties [4–16] including anesthesiology. Anesthesiology training has kept pace with advances in patient care, but practice management education has been largely neglected. With the exception of operating room management, many other ACGME guidelines for education in practice management are treated in a cursory fashion by anesthesiology textbooks [17–19]. A PubMed search also indicates that descriptions of educational methods or results have not appeared in the anesthesiology literature. The popularity of the American Society of Anesthesiologists (ASA) "Certificate in Business Administration" program indirectly suggests that many practicing anesthesiologists did not receive business training during residency [20]. The ASA has begun to address deficiencies in resident business-of-medicine education by promoting a new practice

management section on its website, updating the resident's practice management session at its annual meeting, and creating a new "resident track" at the ASA Conference on Practice Management [21, 22]. Formal education in practice management may be inadequate because of the emphasis on clinical care, the limitations imposed by limited resident work hours, and the isolation of residents from administrative, legal, and reimbursement issues during training [2, 4, 10, 23]. Nevertheless, hospital administrators, insurance companies, and government regulators expect new US anesthesiology graduates to demonstrate proficiency in practice management to facilitate the delivery of cost-effective health care.

To address deficiencies in practice management education during residency, we designed a weekend retreat in business-of-medicine education for Medical College of Wisconsin Post Graduate Year 3 anesthesiology residents. Experts were recruited to discuss interviewing skills, contract law and negotiation, billing and reimbursement, insurance, malpractice, and financial planning. A lecture didactic format was avoided and presentations promoted speaker–audience interaction. Informal measures of initial acquisition and maintenance of knowledge were conducted using a simple quiz. Resident satisfaction with the retreat was also assessed.

The development of the retreat curriculum resulted from our discussions with residency graduates. Young anesthesiologists stated that they had developed the skills to practice their specialty, but also acknowledged feeling overwhelmed by business aspects of practice. The retreat was envisioned as a solution to this perceived need and was funded by the department. Presentation of business-related information relevant to the practice of anesthesiology was the objective of the design. Speakers from the community were chosen to present business, management, and legal topics required for a transition to private practice. This approach provided a new perspective outside the usual teaching environment [10]. The retreat was held off-campus to provide a relaxed atmosphere, a strategy that may allow educational innovation to occur more naturally [24].

The curriculum (Table 1) was designed to follow ACGME guidelines for practice management education. A recruiter provided interviewing advice to the residents. A reimbursement specialist discussed the fundamentals of coding and billing. Examples of common coding mistakes and the implications of such errors on revenue were clearly delineated. Guidelines of US government health programs (Medicare and Medicaid) were reviewed in detail. Health care insurance experts discussed medical malpractice insurance coverage. The function of The Wisconsin Patients and Families Compensation Fund (an insurance fund for large medical malpractice awards) was also explained and required contributions to this fund were outlined. Umbrella policies, disability insurance, long-term care insurance, and life insurance were also described. A health care attorney provided information about contract negotiations and securing an employment agreement. Counsel also discussed regulatory compliance, incorporation, and anesthesiology group-hospital negotiations. Finally, a certified financial planner described practical money management techniques. A syllabus was distributed that included speaker handouts and key related articles. Invited speakers used an interactive teaching style with case-based examples, thereby promoting audience participation [25]. Social events allowed for interaction between residents and speakers.

Table 1 Retreat presentations

How do I find a job?
Academic anesthesia—a career for me?
Construction of an effective curriculum vitae
Successful interviewing strategies
Fundamentals of coding and billing
Medicare and Medicaid guidelines
Regulatory compliance
Medical malpractice insurance
The Wisconsin Patients and Families Compensation Fund
Life, disability, and long-term care insurance
Fundamentals of contracts
Negotiating an effective employment agreement
Managing your money
Retirement planning

Residents evaluated the quality of each speaker using a five-point Likert scale (1 = poor to 5 = excellent) based on the clarity of the educational objectives, program organization, speaker knowledge, handout and audiovisual material quality, presentation of useful information, audience participation, teaching quality, and relevance to future career. These data were provided to the speakers as feedback. Residents were also encouraged to provide comments and suggestions. The speakers submitted four to six questions, and a quiz was constructed using the submitted questions. Variations of this quiz were administered to two consecutive resident classes ($n = 37$) immediately before and after the retreat to estimate acquisition of practice management-related knowledge. A similar quiz was administered 1 year after the retreat to the most recent group of graduating residents ($n = 15$) to estimate whether residents had retained knowledge. A retreat brochure and a sample quiz are available from the corresponding author.

The program was designed because many anesthesiology residents have limited knowledge of the business aspects of practice. Many residents expressed a need to obtain additional business knowledge, felt that the topic

was inadequately addressed in the existing academic curriculum, and stated that "business-of medicine" training should be incorporated into the residency education program. The informal quiz suggested the retreat format enhanced their knowledge of business-related topics, as their scores increased by an average of 40% after compared with before the retreat (from 54 ± 11% to 76 ± 9% correct responses; data are mean ± SD). The residents were very satisfied with the experience and believed that the material was applicable to their future practices. The residents' evaluations of the retreat scored between 4.6 ± 0.5 and 4.8 ± 0.4 (very good to excellent) for all categories. Subsequent evaluation of residents more than 1 year after their participation suggested that these residents maintained knowledge learned at the retreat (72 ± 11%). The program was simple to implement and satisfied ACGME core competencies for US anesthesiology education.

The lack of practice management experience demonstrated by our anesthesiology residents is similar to the findings in other medical specialties. Breitweiser et al. [26] documented the lack of formal business education during medical school or residency training in family practice residents, more than two-thirds of whom acknowledged that they were inadequately prepared to manage a practice. Family medicine physicians surveyed after residency graduation deemed practice management as "mostly or extremely" relevant, but also reported that these subjects received little attention during training [27]. Only 3% of young physicians reported that they were "well prepared" to manage the business aspects of practice [28]. Similar results were observed in internal medicine [29], psychiatry [16, 30], and surgery residents [4]. For example, 87% of general surgery program directors agreed that residents should receive formal business education, but a majority (70%) acknowledged that their current trainees were insufficiently trained in this subject [31]. Surgery residents were aware of the importance of documentation and coding for professional services, but these trainees also felt inadequately prepared for and demonstrated marginal knowledge of this area of practice [12, 32]. Such limited knowledge of coding is an important source of lost revenue [23, 33, 34]. The current retreat described here appeared to improve knowledge in anesthesiology residents, based on the pre- and post-retreat quizzes. Previous attempts to correct educational deficiencies in practice management were also beneficial in other medical specialties [35]. Most family medicine training programs had instituted effective practice management curricula by 1999 [8]. Similar to the current retreat design, an active learning approach was more effective than a didactic program [11]. Nevertheless, another practice-managed care curriculum composed of lectures also increased internal medicine residents' understanding of and comfort with business topics [36, 37]. Business-of-medicine training has been successfully integrated into general surgery [2], obstetrics and gynecology [9], ophthalmology [38], orthopedic surgery [1], otolaryngology [15], pediatrics [10], psychiatry [39], and radiology [24] residency programs.

Our observations should be interpreted within the constraints of several limitations. The small sample size of anesthesiology residents included here precludes hypothesis testing, and thus, our observations are primarily descriptive. It is clear that the residents were motivated to participate in this activity; such "internal motivation" may influence our observations [37]. The relative applicability of the current model to residents' training in other countries cannot be ascertained based on its apparent success in our residents, because of the wide variety of social, cultural, and economic factors. Our retreat may be program-specific, and further study will be required to determine whether similar improvements in practice management knowledge would also occur in residents from other training programs. Because most anesthesiologists are hospital- and not office-based, some practice management topics (e.g., marketing, personnel issues, time management) were not addressed. Discussion of risk management and quality assurance will likely be added to the retreat curriculum in future years, as practice performance assessment is now an established component of the Maintenance of Certification in Anesthesiology program of the American Board of Anesthesiology [40]. The introduction to coding and billing fundamentals presented at the current retreat is unlikely to provide the expertise required for anesthesiology residents to demonstrate confidence in their abilities and is only intended as an introduction. Emergency medicine residents who received less than 2 h of coding and billing instruction consistently made errors in coding that resulted in less reimbursement [34]. Similar findings were observed in other specialties [1, 12, 33]. Thus, anesthesiology residents may require additional training in coding procedures to improve performance. The authors anticipate expanding this component in future retreats.

In summary, our anesthesiology residents report that they have little knowledge of fundamental practice management aspects of anesthesiology. Our retreat improved our residents' acquisition of knowledge about business-related topics. Our residents indicated that they were satisfied with the retreat, were convinced that the material was applicable to their future practices, and believed that the program should be incorporated into the anesthesiology educational curriculum. The program was simple to design and implement, satisfied several ACGME core competencies, may be altered as practice management evolves, and may be adapted by other anesthesiology training programs.

Conflict of interest statement None.

References

1. Gill JB, Schutt RC Jr. Practice management education in orthopaedic surgical residencies. J Bone Joint Surg (Am). 2007;89:216–9.
2. Jones K, Lebron RA, Mangram A, Dunn E. Practice management education during surgical residency. Am J Surg. 2008;196:878–82.
3. American College of Graduate Medical Education. ACGME Program Requirements for Graduate Medical Education in Anesthesiology, IV.A.5.b.(1). Chicago: American College of Graduate Medical Education; 2008:22.
4. Ridky J, Bennett T. Training surgery residents in group practice management. Med Group Manage J. 1991;38:38–9.
5. Piatt JP, Bartley DL, Jacobson AD, Rimsza ME. Practice management training for pediatric residents. Am J Dis Child. 1991;145:299–301.
6. Frank RA. Practice management education—are residency programs properly preparing physicians for the 21st century? Coll Rev. 1993;10:22–47.
7. Frank RA. The physician manager. Practice management education in the 21st century. Med Group Manage J. 1997;44:83–4.
8. Rose EA, Neale AV, Rathur WA. Teaching practice management during residency. Fam Med. 1999;31:107–13.
9. Williford LE, Ling FW, Summitt RL Jr, Stovall TG. Practice management in obstetrics and gynecology residency curriculum. Obstet Gynecol. 1999;94:476–9.
10. Babitch LA. Teaching practice management skills to pediatric residents. Clin Pediatr. 2006;45:846–9.
11. Bayard M, Peeples CR, Holt J, David DJ. An interactive approach to teaching practice management to family practice residents. Fam Med. 2003;35:622–4.
12. Fakhry SM, Robinson L, Hendershot K, Reines HD. Surgical residents' knowledge of documentation and coding for professional services: an opportunity for a focused educational offering. Am J Surg. 2007;194:263–7.
13. DeWitt DE, Robins LS, Curtis JR, Burke W. Primary care residency graduates' reported training needs. Acad Med. 2001;76:285.
14. Stubbe DE, Thomas WJ. A survey of early-career child and adolescent psychiatrists: professional activities and perceptions. J Am Acad Child Adolesc Psychiatry. 2002;41:123–30.
15. Patel AT, Bohmer RM, Barbour JR, Fried MP. National assessment of business-of-medicine training and its implications for the development of a business-of-medicine curriculum. Laryngoscope. 2005;115:51–5.
16. Williams LL. Teaching residents practice-management knowledge and skills: an in vivo experience. Acad Psychiatry. 2009;33:135–8.
17. Lock RL, Eichhorn JH. Practice and operating room management. In: Barash PG, Cullen BF, Stoelting RK, editors. Clinical anesthesia. 5th ed. Philadephia: Lippincott Williams & Wilkins; 2006. p. 27–62.
18. Mesisca PJ, Moss SC. Practice management. In: Longnecker DE, Brown DL, Newman MF, Zapol WM, editors. Anesthesiology. New York: McGraw Hill; 2008. p. 2172–81.
19. Kindscher JD, Rockford M. Operating room management. In: Miller RD, editor. Miller's anesthesia. 7th ed. Philadelphia: Churchill Livingstone Elsevier; 2009. p. 3023–40.
20. American Society of Anesthesiology web site. http://www.asahq.org/conted/cbaconference.htm. Accessed 8 Sept 2009.
21. Cross DA, Seiden SC. Practice management: ASA efforts toward resident education in practice management. ASA Newsl. 2009;73:24–5.
22. Sessler AD, Ferrara Brudos N. FAER's practice management resident scholar program gears up for another successful conference in 2010. ASA Newsl. 2009;73:50–1.
23. Kuo PC, Douglas AR, Oleski D, Jacobs DO, Schrooder RA. Determining benchmarks for evaluation and management coding in an academic division of general surgery. J Am Coll Surg. 2004;199:124–30.
24. Chan S. Management education during radiology residency: development of an educational practice. Acad Radiol. 2004;11:1308–17.
25. Capon N. Planning the development of builders, leaders, and managers for 21st-century business. Boston: Kluwer; 1996.
26. Breitweiser D, Adye W, Arvidson M. Resident evaluation of current practice management training. J Fam Pract. 1981;13:1063–4.
27. Stone MA. Family physicians' evaluation of the practice management education received during residency training. Fam Med. 1994;26:101–5.
28. Cantor JC, Baker LC, Hughes RG. Preparedness for practice. Young physicians' views of their professional education. JAMA. 1993;270:1035–40.
29. Adiga K, Buss M, Beasley BW. Perceived, actual, and desired knowledge regarding Medicare billing and reimbursement. A national needs assessment survey of internal medicine residents. J Gen Intern Med. 2006;21:466–70.
30. Stubbe DE. Preparation for practice: child and adolescent psychiatry graduates' assessment of training experiences. J Am Acad Child Adolesc Psychiatry. 2002;41:131–9.
31. Lusco VC, Martinex SA, Polk HC Jr. Program directors in surgery agree that residents should be formally trained in business and practice management. Am J Surg. 2005;189:11–3.
32. Mabry CD. Surgical residents' knowledge of documentation and coding for professional services: an opportunity for a focused educational offering. Am J Surg. 2007;194:268–9.
33. Ng M, Lawless ST. What if pediatric residents could bill for their outpatient services? Pediatrics. 2001;108:827–34.
34. Howell J, Chisholm C, Clark A, Spillane L. Emergency medicine resident documentation: results of the 1999 American Board of Emergency Medicine in-training examination survey. Acad Emerg Med. 2000;7:1135–8.
35. Cordes DH, Rea DF, Rea J, Vuturo A. A program of management training for residents. Acad Med. 1989;64:45–6.
36. David RA, Reich LM. The creation and evaluation of a systems-based practice/managed care curriculum in a primary care internal medicine residency program. Mt Sinai J Med. 2005;72:296–9.
37. Crites GE, Schuster RJ. A preliminary report of an educational intervention in practice management. BMC Med Edu. 2004;4:15.
38. Tsai JC, Lee PP, Chasteen S, Taylor RJ, Brennan MW, Schmidt GE. Resident physician mentoring program in ophthalmology: the Tennessee experience. Arch Ophthalmol. 2006;124:264–7.
39. Wichman CL, Netzel PJ, Menaker R. Preparing psychiatric residents for the "real world": a practice management curriculum. Acad Psychiatry. 2009;33:131–4.
40. American Board of Anesthesiology web site. http://www.theaba.org/Home/anesthesiology_maintenance#components. Accessed 12 Sept 2009.