

Letters

RESEARCH LETTER

Fees for Certification and Finances of Medical Specialty Boards

The process of board certification has a central role in the self-regulation of physician quality standards.^{1,2} However, many physicians have objected to programs by the American Board of Medical Specialties (ABMS), particularly maintenance of certification (MOC), citing a lack of clinical relevance and evidence to support efficacy as well as high fees to participants. We investigated fees charged to physicians for certification examinations and finances of the ABMS member boards.

Methods | We compiled the fee structures for initial certification and MOC through the published websites of the 24 ABMS member boards as of March 2017. Each board uses a different fee structure for MOC (eg, annual vs triennial), and for comparative purposes MOC fees were annualized by averaging costs (ie, annual dues, examination, and certification fees) over a

10-year period, which is the standard time interval for recertification by the ABMS. We also obtained the most recently published tax documents (fiscal year [FY] 2013 Internal Revenue Service [IRS] Form 990) and tax forms from 10 years prior (FY 2003) for each board. For FY 2013, we extracted the amount and sources of revenue and expenditures, as well as liabilities and assets for each board. The change in net balance (assets – liabilities) was calculated for FYs 2003 through 2013. All financial information was extracted and reported exactly as it was denoted in the Form 990 documents. Form 990 line items that did not account for greater than 10% of total revenue or expenditures (such as conventions, office expenses, and information technology) were excluded from the analysis, as they did not contribute significantly to the sums.

Results | In 2017, the mean fee for an initial written examination was \$1846 (95% CI, \$1586-\$2106). In addition, 14 boards required an oral examination for initial certification at a mean cost of \$1694 (95% CI, \$1528-\$1860). Nineteen boards offered

Table 1. Examination Fees Among 24 American Board of Medical Specialties Member Boards, as of March 2017

	Application and Written Certifying Fee, \$	Mean Oral Certifying Fee, \$	Mean Subspecialty Fee, \$	MOC Annual Fee, \$ ^a
Allergy and immunology	3150	NA	NA	150
Anesthesiology	1550	2100	1600	210
Colon and rectal surgery	1500	800	NA	610
Dermatology	2500	NA	1800	150
Emergency medicine	960	1225	2025	265
Family medicine	1300	NA	1300	110
Internal medicine	1365	NA	2200-2830	194 (general) 256 (specialty)
Medical genetics	1495-1550	NA	920	350
Neurological surgery	1700	1625	NA	480
Obstetrics and gynecology	1500	1965	3025	294
Ophthalmology	1650	1650	NA	200
Orthopedic surgery	1040	2325	1850	211-282
Otolaryngology	3580	1800	2485-4825	310
Pathology	1800-2200	NA	1800	120
Pediatrics	2265	NA	2900	130
Physical medicine and rehabilitation	1395	1910	1800	279
Plastic surgery	1830	1980	1850	490
Preventive medicine	1950	NA	1750	195
Psychiatry and neurology	2385	NA	1900	150
Radiology	2560	NA	3270	340
Surgery	1600	1300	1700	160
Thoracic surgery	1900	1550	NA	275
Urology	1300	1800	1825-2500	200
Overall, mean (95% CI)	1846 (1586-2106)	1694 (1528-1860)	2060 (1787-2333)	257 (205-309)

Abbreviations: MOC, maintenance of certification; NA, not applicable.

^a MOC fees represent an annualized average for comparative purposes.

Table 2. Revenue and Expenditures (in Millions) Among 24 American Board of Medical Specialties Member Boards, Fiscal Year 2013^a

	Revenue, \$ Millions		Expenses, \$ Millions		Total	Liabilities, \$ ^e	Total Assets, \$ ^f	Net Balance, \$ ^g
	Fees (% Total) ^b	Total	Fees (% Total) ^b	Total				
Allergy and immunology	1.5 (93.3)	1.6	0.8 (50.4)	1.5	0.1	5.2	5.1	
Anesthesiology	14.8 (93.1)	15.8	4.2 (30.2)	13.9	8.7	35.8	27.2	
Colon and rectal surgery	0.7 (80)	0.9	0.4 (56.8)	0.8	0	0.9	0.9	
Dermatology	2.4 (90.4)	2.6	0.4 (18.6)	2.3	0	10.2	10.2	
Emergency medicine	13.8 (87.4)	15.8	5.6 (41.2)	13.7	3.8	40.2	36.4	
Family medicine	27.5 (75.9)	36.3	8.2 (29)	28.4	9.2	130.1	120.9	
Internal medicine	56.6 (98.2)	57.6	29.9 (49.5)	60.4	14.7	51.7	37.1	
Medical genetics	0.7 (52.2)	1.4	0	1	0	2.3	2.3	
Neurological surgery	1.4 (50.4)	2.8	0.6 (24.2)	2.6	0.3	3.7	3.4	
Obstetrics and gynecology	14.8 (94.1)	15.7	5.6 (33.9)	16.6	0.6	48.8	48.2	
Ophthalmology	4.9 (92.7)	5.3	1.2 (24.6)	4.9	0.3	8.8	8.4	
Orthopedic surgery	7 (85.1)	8.3	2 (28.5)	7.2	1.2	33.3	32.1	
Otolaryngology	3.1 (74.2)	4.2	1.1 (35.5)	3.1	0	11.4	11.4	
Pathology	3.5 (70.2)	4.9	1.4 (39.7)	3.5	0.7	16.6	15.9	
Pediatrics	26.5 (86.8)	30.5	15.4 (51.6)	2 (6.9)	11.2	107.3	96.1	
Physical medicine and rehabilitation	3.6 (91.6)	3.9	2.3 (54.6)	4.2	0	12.5	12.5	
Plastic surgery	1.8 (60.4)	3	1 (37.1)	2.6	0	4.7	4.7	
Preventive medicine	1.1 (87.7)	1.3	0.5 (41.4)	1.3	0.1	5	4.8	
Psychiatry and neurology	16.5 (83.2)	19.8	5.8 (48.2)	12.1	2	91.2	89.2	
Radiology	15.2 (96.2)	15.8	6.7 (48.3)	13.9	1.5	43.6	42.1	
Surgery	8.4 (86.2)	9.8	5.4 (53.2)	10.2	6.9	14.4	7.5	
Thoracic surgery	1.7 (74)	2.3	0.9 (44.2)	1.9	0	12.3	12.3	
Urology	2.8 (91.6)	3.1	0.9 (39.9)	2.4	0.6	11.1	10.5	
Overall (95% CI) [% of total revenue or expenses]	230.3 (211.5-249.0)[87.7]	262.6 (241.4-283.9)	100.5 (92.2-108.7)[42.2]	238.2 (218.8-257.5)	65.6 (60.2-71.0)	701 (644.5-757.6)	635.4 (584.1-686.7)	

^a Data are based on information reported on Internal Revenue Service Form 990 for each board.

^b Application and examination fees charged to members.

^c Compensation, salary, and benefits for employees and officers.

^d Costs for boards to administer examinations, certify, and verify diplomates.

^e Grants and accounts payable; does not include deferred revenue.

^f All assets including cash, investments, and real estate.

^g Difference of assets and liabilities; net worth.

subspecialty verification (eg, hand surgery within orthopedic or plastic surgery) with a mean cost of \$2060 (95% CI, \$1787-\$2333). Mean fees for MOC were \$257 annually (95% CI, \$205-\$309) (Table 1).

In FY 2013, member boards reported \$263 million (95% CI, \$212 million-\$249 million) in revenue and \$239 million (95% CI, \$218 million-\$258 million) in expenses; a difference of \$24 million (95% CI, \$22 million-\$26 million) in surplus (Table 2). Examination fees accounted for 87.7% (95% CI, 82.4%-93.0%) of revenue and 21.3% (95% CI, 17.0%-25.6%) of expenditures, whereas officer and employee compensation and benefits accounted for 42.2% (95% CI, 36.9%-47.5%) of expenses.

In total, the boards reported \$701 million (95% CI, \$644 million-\$758 million) in assets and \$65.6 million (95% CI, \$60 million-\$71 million) in liabilities (difference, \$635 million (95% CI, \$584 million-\$687 million) (Table 2). Six boards reported no debt; and the remaining 18 held reported assets that substantially exceeded liabilities. Between 2003 and 2013, the change in net balance (ie, difference of assets and liabilities) of the ABMS member boards grew from \$237 million (95% CI, \$232 million-\$241 million) to \$635 million (95% CI, \$584 million-\$687 million).

Discussion | As nonprofit organizations funded primarily by physician members, the ABMS member boards have a fiduciary responsibility to match revenue and expenditures. However, this is not the case for most boards, with overall revenue greatly exceeding expenditures in FY 2013. As a result of such margins, the member boards saw a mean annual growth rate of 10.4% during the decade studied.

This study is limited primarily by the data source. Although IRS Form 990 includes major sources and amounts of revenue, expenses, liabilities, and assets, it does not contain complete and specific financial accounting for the ABMS member boards. Also, board subsidiaries and foundations were not included.

Board certification should have value as a meaningful educational and quality improvement process. Although some evidence suggests board certification may improve performance and outcomes,³⁻⁵ the costs to physicians are substantial. More research is needed to assess the cost-benefit balance and to demonstrate value in board certification.

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1. Bauchner H, Fontanarosa PB, Thompson AE. Professionalism, governance, and self-regulation of medicine. *JAMA*. 2015;313(18):1831-1836.
2. Nora LM, Wynia MK, Granatir T. Of the profession, by the profession, and for patients, families, and communities: ABMS board certification and medicine's professional self-regulation. *JAMA*. 2015;313(18):1805-1806.
3. Teirstein PS. Boarded to death—why maintenance of certification is bad for doctors and patients. *N Engl J Med*. 2015;372(2):106-108.
4. Gray BM, Vandergrift JL, Johnston MM, et al. Association between imposition of a maintenance of certification requirement and ambulatory care-sensitive hospitalizations and health care costs. *JAMA*. 2014;312(22):2348-2357.
5. Holmboe ES, Wang Y, Meehan TP, et al. Association between maintenance of certification examination scores and quality of care for Medicare beneficiaries. *Arch Intern Med*. 2008;168(13):1396-1403.
6. Brennan TA, Horwitz RI, Duffy FD, Cassel CK, Goode LD, Lipner RS. The role of physician specialty board certification status in the quality movement. *JAMA*. 2004;292(9):1038-1043.

COMMENT & RESPONSE

Dexmedetomidine in Patients With Sepsis Requiring Mechanical Ventilation

To the Editor The trial by Dr Kawazoe and colleagues¹ found no significant differences in ventilator-free days and mortality rates after 28 days among patients with sepsis receiving mechanical ventilation who did or did not receive dexmedetomidine, in contrast to previous randomized clinical trials^{2,3} and systematic reviews.⁴ The beneficial effects of dexmedetomidine in these studies suggest additional positive effects of α_2 -antagonists in sepsis due to its sympatholytic effects, limiting adrenergic stress as has been described for β -blocker treatment.⁵ Consequently, other explanations for the findings of Kawazoe and colleagues should be sought. There are several limitations of the present study that should be discussed.

Midazolam was used not only in the control group but also in 10% to 20% of the patients in the dexmedetomidine group daily. As a consequence, the results in the dexmedetomidine group may have been influenced by midazolam, potentially reducing the effect of dexmedetomidine on the duration of mechanical ventilation. In addition, both groups (with and without dexmedetomidine sedation) received a wide spectrum of sedatives (propofol, midazolam, fentanyl, dexmedetomidine) with the potential for multiple interactions. Therefore, it is difficult to draw conclusions about the influence of dexmedetomidine alone.

In addition, the choice of opioid might have attenuated the beneficial effects of dexmedetomidine. Fentanyl has a relatively long context-sensitive half-life. The dosage of fentanyl was higher in the dexmedetomidine group than in the control group on days 2 through 4. Opioids with more favorable pharmacologic profiles might be advantageous with a sedation regimen using dexmedetomidine.

Future trials evaluating the effects of dexmedetomidine on the level of sedation or the duration of mechanical