In the mid-1990s, some observers conjectured that too many medical specialists were being trained for the anticipated physician workforce needs of the future, particularly under a managed care paradigm (1–8). Reports were published indicating that trainees in certain specialties were having difficulty finding employment (1,9). This was attributed to an excess of specialists entering the workforce. The American College of Cardiology (ACC) published a workforce statement reporting that too many interventional cardiologists were being trained in cardiology fellowship programs relative to the need for interventional cardiologists in either academic medicine or the private sector (10). Also, members of the ACC Physician Workforce Advisory Committee (PWAC) informally received information that some cardiology fellows felt they were being inadequately counseled or prepared for their search for a posttraining position, particularly in the private sector.

In response to these and other concerns, the PWAC conducted a survey in 1996 of recent trainees who had completed their cardiovascular fellowship training one to two years earlier, in order to obtain feedback on a variety of issues. The purpose of the survey was to address the ease or difficulty with which fellows found jobs after training, the factors that influenced their career choices, why they chose either an academic job or a job in private practice, what salaries they accepted and what changes in the training environment might be made that could enable training programs to better prepare newly trained fellows for acquiring posttraining employment. The survey was repeated in 1998, with minor changes, to determine trends in these factors. This report presents the results of the ACC Training Outcomes Survey conducted in 1998 and compares the responses with those obtained in 1996.

**SURVEY METHODOLOGY**

An initial mailing containing a copy of a survey questionnaire with a cover letter from the ACC was sent to 1,082 potential respondents in April 1998. A follow-up mailing was sent one month after the initial mailing to all fellows not responding to the original solicitation. A total of 10 questionnaires were returned to the ACC as undeliverable, reducing the final eligible sample size to 1,072. Of these, 535 questionnaires were returned to the ACC, for a total response rate of 50%. The ACC commissioned Applied Research Analysts (ARA; McLean, Virginia) to process the returned questionnaires and to statistically compare the results of the 1998 survey with the one completed in 1996 using chi-square or t-test analyses, as appropriate.

**THE SEARCH FOR THE CHARACTERISTICS OF POSTTRAINING POSITIONS**

The vast majority of respondents (98%) to the 1998 survey had successfully obtained a posttraining position at the time of the survey. Fifty-four percent of those surveyed reported that the job search for their first posttraining position was either very difficult (11%) or somewhat difficult (43%). Only 13% found the job search to be very easy. In the 1996 survey, a similar percentage (50%) found the search for a posttraining position either somewhat difficult or very difficult. In the search for their current positions, the fellowship graduates were not always successful in obtaining the exact type of position they desired. As shown in Table 1, 80% or more of respondents judged themselves to be fairly successful in most aspects of the job search, and over half of them were very successful or somewhat successful in each aspect. Respondents fared slightly better in terms of location, type and reputation of practice, but they were somewhat less successful in obtaining the salaries they wanted or the level of research activity they sought. Overall, these responses did not differ significantly from those given in the 1996 Training Outcomes Survey. In the 1998 survey, 31% responded that they were very successful in attaining the income level desired compared with 37% who were very successful in attaining the desired income level in the 1996 survey. A possible explanation for the low percentage of respondents...
who successfully negotiated the desired income for their first position may relate to the fact that total income for cardiologists started to decrease, or failed to increase significantly, beginning in the mid-to-late nineties.

In searching for a first posttraining position, respondents placed most weight on the location and type of practice (Table 2). The reputation of the practice was accorded somewhat lower importance, and income level even lower. Interestingly, income received significantly less weight in 1998 than in 1996 ($p = 0.032$). The least important factors in the search and evaluation of a possible position were research activity and the opportunity to participate in clinical trials. Respondents said that they would weigh these factors in the same order if they had to negotiate again for a first position.

Table 3 shows the percentage of respondents attaining certain starting compensation ranges and comparisons with those responding to the 1996 survey. Less than 42% of those surveyed in both 1996 and 1998 received a starting compensation of $150,000 or greater.

Fifty-three percent (vs. 51% in 1996) of the respondents in the 1998 survey took a position in a cardiovascular specialty group, while 11% joined a multispecialty group (vs. 13% in 1996), and 19% joined the faculty of a medical school or university hospital (vs. 22% in 1996). Only 3% of the fellows responding to the 1998 survey took a position in solo practice, down from 6% in 1996. In 1998, 8% took a position in a government hospital or agency, which was up from 4% in 1996. This distribution with respect to the type of posttraining position accepted in 1998 was significantly different from the distribution of job settings surveyed in 1996 ($p = 0.019$), with slightly more trainees taking jobs in cardiovascular group practices and fewer accepting positions on faculties of academic medical centers.

Most respondents reported satisfaction with the geographic location of their first posttraining position. Interestingly, 27% stated that they planned to leave their current position within five years. Another 17% planned to leave their current position in more than five years. Of those who indicated a preference for an area of the country other than where they took their first job, the Northeast (19%) and the Southeast (13%) were the most popular, while the Southwest (6%), the Northwest (7%) and the Midwest (9%) were less popular.

Thus, some interesting trends in cardiology practice and direction are evident. Starting salaries appeared to have flattened and possibly diminished somewhat. Geographic location as its pertains to quality of life and, perhaps, the consideration of a spouse’s career have emerged as important criteria in selection of the type of practice—criteria which, if satisfied, are linked with acceptance of lower compensation. Financial compensation appears not to be as important in the choice of career as is job security. In general, fellows leaving training are highly successful in securing jobs. Only 11% found the process of obtaining a posttraining position to be very difficult.

### Table 1. Degrees of Success in Obtaining Certain Criteria in a Posttraining Position

<table>
<thead>
<tr>
<th></th>
<th>Very Successful (%)</th>
<th>Somewhat Successful (%)</th>
<th>Somewhat Unsuccessful (%)</th>
<th>Very Unsuccessful (%)</th>
<th>Not an Important Factor to You (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>57</td>
<td>57</td>
<td>32</td>
<td>28</td>
<td>7</td>
</tr>
<tr>
<td>Type of practice</td>
<td>59</td>
<td>59</td>
<td>33</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Income level</td>
<td>31</td>
<td>37</td>
<td>48</td>
<td>42</td>
<td>16</td>
</tr>
<tr>
<td>Reputation of practice</td>
<td>56</td>
<td>55</td>
<td>33</td>
<td>34</td>
<td>9</td>
</tr>
<tr>
<td>Research activity of practice*</td>
<td>22</td>
<td>21</td>
<td>32</td>
<td>26</td>
<td>13</td>
</tr>
</tbody>
</table>

*p = 0.016 for 1998 vs. 1996 responses.

### Table 2. Ranking in Importance of Certain Factors Being Considered in the Initial Search for a Posttraining Position

<table>
<thead>
<tr>
<th></th>
<th>Mean Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1998</td>
</tr>
<tr>
<td>Location</td>
<td>2.1</td>
</tr>
<tr>
<td>Type of practice</td>
<td>2.2</td>
</tr>
<tr>
<td>Income level</td>
<td>3.7</td>
</tr>
<tr>
<td>Reputation of practice</td>
<td>2.9</td>
</tr>
<tr>
<td>Research activity of practice</td>
<td>4.8</td>
</tr>
<tr>
<td>Opportunity to participate in clinical trials</td>
<td>4.9</td>
</tr>
</tbody>
</table>

*Rankings made on a scale of 1 to 5, with 1 considered “most important” and 5 considered “least important”; †$p = 0.32$; ‡$p < 0.0001$.

NA = not applicable because this was not surveyed in 1996.
MENTORING

A great deal of information regarding mentoring for a job search during training was gleaned from the survey. Forty-three percent responded very well on the 1998 Training Outcomes Survey, compared with 34% on the 1996 survey, when asked “How well did your fellowship training prepare you for your job search?” Overall, 70% responded that fellowship training helped them prepare very well or somewhat well on the 1998 survey, compared with 67% on the 1996 survey (p = 0.019). However, it is important for program directors to know that 30% of the recently trained cardiologists responded that fellowship training prepared them somewhat poorly or very poorly in 1998, which is comparable to the 33% in 1996. Only 37% of 1998 respondents answered “yes” when asked the question “Did you receive sufficient advice/mentoring during your training to assist you in the search and selection of a job?” Seventeen percent provided answers when given the opportunity to respond in an open-ended manner to the question “What changes in your search and selection of a job could have helped?” Of the responses, the following themes were common:

1. Twenty-seven percent thought that the fellowship program could have provided more information on the business end of cardiology practice;
2. Seventeen percent wanted more information on how to evaluate private practice positions;
3. Fourteen percent wanted better mentoring and personal contact with the faculty during their fellowship; and
4. Twelve percent made recommendations about the specific medical content of the training.

Another open-ended question asked was “What could the American College of Cardiology have done better to assist you?” Of those who responded, 19% gave answers, summarized as follows:

1. Thirty-five percent thought the ACC should provide databases of available positions in cardiology for fellows to use in searching for jobs;
2. Ten percent wanted additional information on how to evaluate private practices;
3. Six percent expressed the desire for the ACC to provide salary information by geographical region of the country; and
4. Five percent cited the desire for instruction in interviewing and constructing a curriculum vitae.

ACADEMIC ISSUES

The 1998 Training Outcomes Survey raises significant concerns pertaining to the viability of academic cardiology. Cardiology fellowship training programs represent the training ground for the future faculty for academic medical centers. In the last several years, there has been a decrease in the number of fellowship training programs and a decrease in the number of fellows being trained (11). Additionally, over 50% of those matching for positions in cardiology fellowships programs in the Fellowship Match are international medical graduates (12), many of whom return to their native countries. This results in a smaller potential pool of academic cardiologists for the U.S. academic medical center workforce.

In order to determine early interests and changes during training, the survey asked “When you started your fellowship training, was it your intention to train for a position in academic cardiology?” Forty-six percent responded affirmatively. However, by the time this group of respondents completed their fellowships, only 27% actually accepted positions in academic medicine (defined as being on the faculty of a medical school or university teaching hospital), and 73% accepted positions in private practice. By the time this survey was received and filled out, only 20% of those surveyed were currently in academic positions. This was slightly down from 22% in 1996 and is not statistically significant. On a scale of 1 to 5, with 1 being most important, fellows completing training who switched from a career goal in academic medicine to one in private practice cited security for the future (2.2) as the most important factor in that decision. This was followed by spousal or family considerations (2.6), geographic considerations (2.9), salary and bonuses (3.7) and indebtedness at the end of fellowship training (4.8). Reasons for the lack of enthusiasm for academic medicine probably include uncertainty about changes in the health care environment, the perceived uncertainty of research funding from the National Heart, Lung and Blood Institute and industry and the overall feeling of insecurity about the stability of an academic career.

Of those fellows who initially accepted positions in academic medicine (27% of the respondents), the most important reason provided for the decision to remain in academic medicine was to engage in clinical practice in an academic setting. This received a score of 2.1, with 1 being the most important and 5 being the least important. This was followed by geographic location (2.8), teaching (2.9), desire for a research career (3.2) and, lastly, income (4.0). This ranking of reasons is quite surprising in that the most important factor in the decision to remain in academic
medicine was to be able to engage in clinical practice in an academic setting rather than to pursue a traditional career as an investigator or an educator. Desire for a research career ranked only fourth out of the five categories surveyed. It appears that many of those remaining in academic centers do so to enter clinical practice in an environment in which they feel comfortable. This response may be related to fellows having the impression that engaging in a tertiary clinical practice is the most desirable and exciting aspect of academic cardiology. In the current academic health care environment, job security and financial rewards are more closely linked with clinical practice than with careers in research. Perhaps newly hired academic faculty members are insecure about the potential for success in research and anticipate having greater success by assuming a more clinical role. Perhaps the dominant cardiologist role-models in academic medical centers today are those who have high clinical profiles, such as subspecialists in interventional cardiology and electrophysiology.

Income was rated as the least influential factor in the decision to accept a position in academic medicine. As noted previously, nearly half (46%) of the fellows completing training began professional careers with salaries between $100,000 and $149,000. Thirteen percent of those completing training had initial salaries below $100,000. Of this latter group, 59% began with careers in academic cardiology. Thus, these data show that the starting salary for fellows entering careers in academic cardiology is considerably lower than salaries of those entering the private sector. Because income was less important among those initially choosing an academic career than among the overall group (mean response 4.0 on a scale of 1 to 5 vs. 3.7 for entire group, Table 2), fellows appear to recognize that academic careers provide less financial reward, and those seeking an academic position consider income level less important in career satisfaction.

Although the choice of an academic position remains second only to that of cardiovascular group practice (in the private sector), some disturbing trends are apparent even in this two-year interval between the 1996 and 1998 surveys. Fellows joining medical school faculties decreased from 22% to 19% of all graduates, while those choosing cardiovascular group practice increased from 51% in 1996 to 53% in 1998. In addition, among those who regard their current positions as ideal, the academic cardiology faculty respondents answering in the affirmative decreased from 26% in 1996 to 23% in 1998. Conversely, affirmative responses from the cardiovascular group practice members increased from 58% to 64% over the same period. Six percent of the respondents identified a multispecialty group practice as an ideal setting, down from 9% in 1996. The change in these responses from 1996 to 1998 (p = 0.008) further indicates a decrease in the number of individuals entering the ranks of medical school faculties and a decrease in the level of satisfaction among those who do.

Those surveyed were asked to state how many years of fellowship training they completed before entering their first posttraining positions. The average duration of training for the 1998 respondents was three years and five months. Considering that many fellows complete a fourth year of training in interventional cardiology, electrophysiology or another clinical discipline, the fact that the average length of training was only three years and five months suggests that a low percentage of fellows had undertaken two or more years of research to prepare them for positions in academic cardiology. It appears that little, if any, time remains in most fellows’ three-year curriculum for substantive research activities, because 24 months of clinical training is perceived by most fellows as suboptimal if they decide to specialize in a particular discipline in cardiovascular medicine (e.g., interventional cardiology, electrophysiology, heart failure/transplantation, advanced imaging, vascular medicine). It could be speculated that a presumed lack of sufficient training experience in research may also reflect why fellows seeking a position in academic cardiology choose to engage in clinical practice in an academic setting rather than engage in a predominantly investigative career. Conversely, fellows who decide early that they wish to seek a clinical practice position with no research involvement after training, also decide early in their fellowship to train for only three years.

WOMEN IN CARDIOLOGY

Of those responding to the 1998 survey, 9% were women. (Gender was indicated in all but one of the returns—484 from men and 50 from women.) Women were initially more attracted to academic positions than men, confirming results of a previous survey (13). Women also reported that it was both easier to find a position and easier to find a position in a desired location. They also found positions significantly faster than did men (4.49 months vs. 6.05 months; p = 0.01). Whereas 59% of men found it very difficult or somewhat difficult to find a first position, only 40% of women found it very difficult or somewhat difficult. While only 12% of men found it very easy to find a position, 31% of women responded that the search was very easy. Seventy-seven percent of women who responded stated that they were very successful in finding a posttraining position in a desired geographic location, compared with 55% of men. In their starting positions, women were paid less than men. As shown in Table 4, 28% of women received less than $100,000 in salary for a starting position, compared with only 11% of men. The lower compensation for women was statistically significant (chi-square = 17.16; p = 0.004). The highest mean starting salaries were reported in the East Southcentral states, and the lowest in New England (analysis of variance; p < 0.01).

One factor that probably contributed to the lower salaries for women was that more women than men entered academic cardiology positions. Another factor that possibly contributed to the reported discrepancy in salaries is that...
more women than men will have sought part-time positions or limited hours (13), which would be compensated at a lower rate. The survey did not ask whether the positions accepted were full-time or part-time. Also, previous surveys have suggested that more women practice noninvasive cardiology as an area of specialization (13), which would be compensated at a lower rate than interventional cardiology and electrophysiology. The percentage of women compared with men entering pediatric cardiology is not known; however, one recent survey (13) indicated that 17% of women, compared with 7% of men, were pediatric cardiologists. Pediatric cardiologists, as a group, earn less than those who practice adult cardiology.

**PEDiatric CARDIOLOGY**

Of the 1,136 receiving the Training Outcomes Survey in 1998, 81 were pediatric cardiologists, and 47 of those answered the survey for a response rate of 58%. All 47 pediatric cardiologists obtained posttraining positions, and 40% said the search for a position was either very difficult or somewhat difficult. The most important factors for fellows conducting an initial search for a posttraining position as a pediatric cardiologist, in descending order, were: 1) type of practice, 2) location, 3) reputation of practice and 4) research activity of the practice. Ninety-six percent responded that they were either very successful or somewhat successful in obtaining the type of practice they desired. For location, 83% were either very successful or somewhat successful, with only 2% unsuccessful in obtaining a desired practice location. With respect to salary compensation, 49% of pediatric cardiologists had starting salaries ranging from $50,000 to $100,000, and 38% were paid between $100,000 and $150,000. Only 9% received an initial salary above $150,000. The compensation for starting pediatric cardiologists, as expected, was lower on the average in this survey than that of respondents practicing adult cardiology.

In comparison with the adult cardiologists surveyed, 61% of pediatric cardiologists were in academic cardiology, with 17% in strictly cardiovascular group practices and 9% in a multispecialty group. Interestingly, 65% of the respondents identified the university or medical school as an ideal practice setting, and 30% identified a cardiovascular group as ideal. These responses are quite different from the adult cardiology responses because it can be inferred from the group response that the majority of adult cardiologists are in cardiovascular group practices and a substantially lower percentage are in academic cardiology. Eighty-eight percent of pediatric cardiologists surveyed were either very satisfied or somewhat satisfied with their current positions. Thirteen percent were either somewhat dissatisfied or very dissatisfied. This is not significantly different from the entire group responses.

The median length of fellowship training in pediatric cardiology for the respondents was three years. Fifty-eight percent of the respondents felt that the fellowship training program prepared them very well or somewhat well for a job search, but 32% felt that they were somewhat poorly or very poorly prepared. Pediatric cardiologists felt that they had fewer resources to help them search for jobs than did their adult cardiology colleagues. The suggestions given in the open-ended questions for assistance in job searching included the supplying of databases regarding typical salaries in a given region, job satisfaction information for new cardiologists working in those regions, lists of job opportunities other than adult cardiology, publications with cardiology positions noted and centralized service for identifying job opportunities in the ACC. The pediatric cardiologists surveyed felt that they required more training in their fellowship programs in practice management, business administration, interviewing skills, contract negotiation, obtaining reasonable starting salaries relative to geographic location and assessing partner compatibility. Overall, there were no significant differences in any of the responses in the 1998 compared with the 1996 surveys.

**PERFORMANCE OF PROCEDURES**

The newly trained cardiologists surveyed were asked to indicate all of the cardiovascular procedures that they currently performed or anticipated performing in the following year and which procedures they would like to perform but were not currently performing. Table 5 compares responses in the 1998 survey with responses in the 1996 survey. The most frequently performed noninvasive procedures were electrocardiography (94%), exercise stress testing (90%), echocardiography (88%), ambulatory ECG monitoring (88%) and transesophageal echocardiography (74%). More respondents performed stress echocardiography (74%) than nuclear cardiology procedures (44%).

With respect to invasive procedures, in 1998 72% of the respondents performed diagnostic catheterization, and 27% performed interventional cardiology procedures. The latter value was down from 33% in 1996, which is an interesting trend. It may be related to a reduction in interventional cardiology positions available, to low-volume operators who no longer perform interventional procedures or to a higher sampling of noninterventional cardiologists. Only 7% of the respondents were performing electrophysiology procedures.

### Table 4. Comparison of Men and Women With Respect to Starting Salaries in Their First Posttraining Position

<table>
<thead>
<tr>
<th>Salary Range</th>
<th>Women (%)</th>
<th>Men (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $50,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>$50,000–$99,999</td>
<td>28</td>
<td>11</td>
</tr>
<tr>
<td>$100,000–$149,999</td>
<td>53</td>
<td>44</td>
</tr>
<tr>
<td>$150,000–$199,999</td>
<td>15</td>
<td>36</td>
</tr>
<tr>
<td>$200,000–$249,999</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Over $250,000</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Chi-square = 17.16, df = 5, p = 0.004.
which was down from 12% in the 1996 survey. Seven percent of the respondents were engaged in transplant cardiology, and 25% performed permanent pacemaker implantation.

When asked which procedures they would like to perform but were currently not performing, the highest response was 16% wanting to perform or interpret nuclear cardiology procedures, down from 29% in 1996. Fifteen percent wanted to perform interventional peripheral vascular procedures. Other interesting responses to this question included 12% who desired to perform coronary interventional procedures, 14% who wanted to perform permanent pacemaker implantations and 12% who wanted to engage in tilt-table testing. Ninety-eight percent of the respondents described the fit between their training and the services and procedures they were currently providing as very good or somewhat good. Thus, most cardiologists appear to be performing the types of procedures they would like to perform. Training programs appear to be providing sufficient experience for fellows to be able to perform specialized procedures.

ROLE OF THE ACC

One goal of the survey was to determine how the ACC could assist fellows in searching for jobs. Verbatim responses were solicited to the open-ended question “What could the ACC have done to better assist you?” Most respondents (81%) left this blank, and 19% gave responses. The two major themes that emerged from the analysis of the responses were that fellows who were finishing the training program wanted general help with the job search and more information on the business end of cardiology practice. Among the respondents asking for more help from the ACC, the most frequent request by far (35% of those responding to the question) was for a better, more extensive database of available positions for fellows to use in searching for jobs. Ten percent wanted the College to provide information on what to look for when evaluating a private practice, and 9% wanted unspecified job-search help. Another 3% wanted assistance in preparing their curriculum vitae, and 2% wanted advice on how to present themselves in an interview. Cardiologists responding to this question also wanted 1) more help and information on negotiating contracts, 2) unspecified information dealing with the business side of cardiology practice and 3) salary information by geographic region of the country. Of interest, this latter information is now being provided on a regular basis in the ACC publication, Cardiology. The ACC also lists available job opportunities on its web page.

Of the pediatric cardiologists responding to this open-ended question, 79% expressed dissatisfaction with the way the ACC and the fellowship programs treated pediatric
cardiology specialists. Their responses indicate that they perceive the College as primarily supporting adult cardiologists, consequently giving lesser priority to pediatric cardiologists. A few of the respondents giving verbatim responses to this question stated that during their job search they would have liked more information from the ACC on academic positions, and the same percentage would have liked more information on HMOs and managed care.

CONCLUSIONS

In summary, the two ACC Training Outcomes Surveys performed in 1996 and 1998 indicate that the vast majority (98%) of cardiology trainees successfully obtain a posttraining position, although more than half of these fellows had difficult job searches. The mean time for completing a job search was six months. Women found jobs easier than men did, reporting a shorter time to obtain their positions and greater success finding jobs in desired locations. Slightly more than 50% of trainees have joined a cardiovascular group practice, with 19% accepting positions in academic cardiology. The latter percentage is down from the 1996 percentage. One of the most interesting findings in this survey is that a sizable number of fellows (46%) began fellowships with the intention of obtaining positions in academic cardiology, but more than half (56%) switched their goal to a clinical practice during training. The most frequent reason for this switch from an academic to a clinical position was concern about security for the future. Mentoring of fellows appears to be improving, but more than 60% said they did not receive sufficient mentoring to assist them in selecting and searching for jobs. A large percentage of fellows surveyed wanted greater assistance from their training institutions and the ACC in a variety of areas pertaining to the process of securing a posttraining position. Starting salaries are slightly lower in 1998 than in 1996, but more respondents were satisfied with their geographical locations in 1998 than in 1996. Very few trainees entered the solo practice of cardiology.

Perhaps the most striking finding in comparing the 1998 survey with the 1996 survey is how comparable were most of the responses. Little seems to have changed over the two years with respect to the difficulty of the job search, the length of time the search took, the factors that respondents took into consideration when evaluating positions, or the degree of success respondents had in meeting their expectations. There were also few changes in the type of practice setting or procedures performed. Overall, satisfaction expressed by the respondents with fellowship training is up slightly in 1998 from 1996 levels.

Acknowledgments

We are grateful for the superb assistance in preparing, conducting and analyzing the surveys provided by Deanne Watrous Otto, Karen Collishaw and Camille Sorosiak from the ACC. We also recognize the contributions of Dr. Dan Poe at Applied Research Analysts, McLean, Virginia, for his work in preparing the Final Report of the 1998 Training Outcomes Survey. We express our appreciation to Dr. Arthur Garson, Dr. Valentin Fuster, Dr. Sam Wann, Ms. Chris McEntee and Ms. Collishaw, who reviewed the manuscript and provided useful comments regarding its content. Additionally, we appreciate the assistance provided by Jerry Curtis in the preparation of the manuscript.

The members of the Physician Workforce Advisory Committee during the time that the surveys were conducted were Joseph S. Alpert, MD, Joseph D. Babb, MD, Kenneth Lee Baughman, MD, George A. Beller, MD, Valentin Fuster, MD, Julius M. Gardin, MD, John J. Gregory, MD, Howard C. Herrmann, MD, Marian C. Limacher, MD, Douglas S. Moodie, MD, Elizabeth O. Ofili, MD, Barry D. Rutherford, MD, Ara Sadaniantz, MD, George W. Vetrovec, MD, Bonnie H. Weiner, MD, and Roberta G. Williams, MD.

REFERENCES