

# Value-Added Benefits and Utilization of Pathologists' Assistants

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• **Context.**—The role of pathologists' assistants (PAs) in terms of surgical and autopsy prosection has been well established; however, the role of PAs in areas beyond surgical and autopsy pathology, such as laboratory administration and management, education, and research, is not so well understood.

**Objective.**—To determine the scope and extent of ancillary duties (value-added benefits) performed by PAs.

**Design.**—A self-administered, electronic survey was disseminated to all members of the American Association of Pathologists' Assistants with fellowship status to analyze the ancillary duties PAs provide in laboratory administration and management, education, and research.

**Results.**—Respondents were from 44 states and most had 6 or more years of experience in various work settings: community hospitals (50%), academic hospitals (30%), private pathology laboratories (15%), and "other" settings

(5%). Most were involved in quality assurance programs (64.0%), laboratory accreditation inspections (56.2%), and a large percentage (44.4%) also had direct supervisory experience. Roughly 36% of respondents reported training residents in prosection skills in a clinical setting, while a small percentage reported teaching for-credit courses in a classroom setting (4.9%). The primary research responsibility was fresh tissue procurement for tumor banking (52.7%).

**Conclusions.**—Pathologists' assistants currently are involved in ancillary duties beyond surgical and autopsy prosection. Our findings indicate that PAs have a desire to become more involved in these duties, and there is opportunity for pathologists to benefit further by using PAs to the full extent of their knowledge, skills, and interests.

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Despite formal training programs graduating pathologists' assistants (PAs) since 1969, only a small amount of literature exists regarding the PA profession.<sup>1–11</sup> Pathologists' assistants have been defined as physician extenders who traditionally work in anatomic pathology with most of their time spent grossing surgical specimens.<sup>6</sup> They may have additional duties that include, but are not limited to, quality analysis, teaching, photography, and intraoperative consultations, typically in the form of frozen sections. In the context of the aforementioned, the cost benefit analysis of the grossing of surgical specimens by PAs, when compared to pathologists, has been established. A previous study reported that practices with a surgical caseload of 50 000 specimens can save roughly \$560 000 a year when they have a PA grossing the surgical specimens rather than a pathologist.<sup>3</sup> In addition to cost reduction, the use of PAs allows pathologists to prioritize their time and focus on making histopathologic diagnoses.

Accreditation of the training programs, scope of work guidelines,<sup>1</sup> and a national certification program has done much to set standards for the PA profession. Currently, there are 8 university-based programs in the United States that are accredited by the National Accrediting Agency for Clinical Laboratory Sciences, and 1 program accredited in Ontario, Canada. These programs provide training and exposure to many ancillary activities, as well as lay the foundation in anatomic pathology, which allow growth into these duties as individuals mature into their positions.

The literature is limited in describing additional duties for PAs beyond their "classical" roles within anatomic pathology, namely, surgical and autopsy prosection. For this reason, we explore the value-added benefits of the PA, specifically in the areas of laboratory administration and management, education, and research.

## METHODS

The Institutional Review Board at Rosalind Franklin University of Medicine and Science (North Chicago, Illinois) approved this study before its initiation.

## Study Sample

The study was a cross-sectional sample of 1169 PAs who were registered as fellow members of the American Association of Pathologists' Assistants (AAPA) from August 22, 2011 to September 19, 2011. Members of the AAPA with fellow status are those who have passed the American Society for Clinical Pathology Board of

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Certification examination, or who have passed the AAPA Fellowship Examination before 2005.

### Survey Instrument

The study investigators designed a self-administered, electronic, voluntary survey by using Google Documents to obtain descriptive data on the value-added tasks performed by PAs. Pathologists' assistants were informed of the purpose of the survey, and how the information was intended to be disseminated, via e-mail notification. On-line completion of the survey was assumed to indicate consent of the respondent.

The value-added survey was piloted to a convenience sample of 6 PAs chosen by 2 of the study investigators. Informed written consent was obtained from all 6 respondents (100% response rate). The initial survey consisted of 36 questions concentrating on the involvement of the PAs in laboratory administration and management, education, and research. All questions asked the respondents to limit their answers to within the last 1-year time frame. Minor modifications were made to 9 questions, and 2 additional questions were also added.

The final version of the value-added survey disseminated to all fellow members of the AAPA consisted of 38 questions. The first 3 questions collected demographic data: state of practice, type of practice setting, and length of practice. Several questions were also embedded throughout the survey, aimed at obtaining attitudinal data of the respondents in relation to laboratory administration and management, education, and research, using a Likert-like scale. The remainder of the survey consisted of questions pertaining to the value-added tasks performed by PAs, most of which required "yes" or "no" responses.

A follow-up e-mail reminder was sent to all fellow members of the AAPA to try to increase the response rate during the second week the survey was open. The time period to complete the survey was also extended from the original deadline of September 9, 2011 to September 19, 2011.

### Data Analysis

The data from the pilot study were analyzed separately from the value-added survey sent to all fellow members of the AAPA. Descriptive statistics were used to describe the data as derived from the "summary of responses" automatically generated by Google Documents and Microsoft Excel (Microsoft, Redmond, Washington). The data were analyzed for all PAs collectively, and according to practice setting.

## RESULTS

The response rate of the value-added survey was 30%, with 347 AAPA fellows responding of 1169 total fellow members registered with the AAPA. Most respondents were located in the South (36%) as displayed in Figure 1, which highlights the geographic distribution of all respondents. Most had worked 6 or more years (74%) as displayed in Figure 2. Most respondents work in community hospitals (50%), followed by academic hospitals (30%), private pathology laboratories (15%), and the remainder categorized themselves under the heading "other" (5%), as displayed in Figure 3.

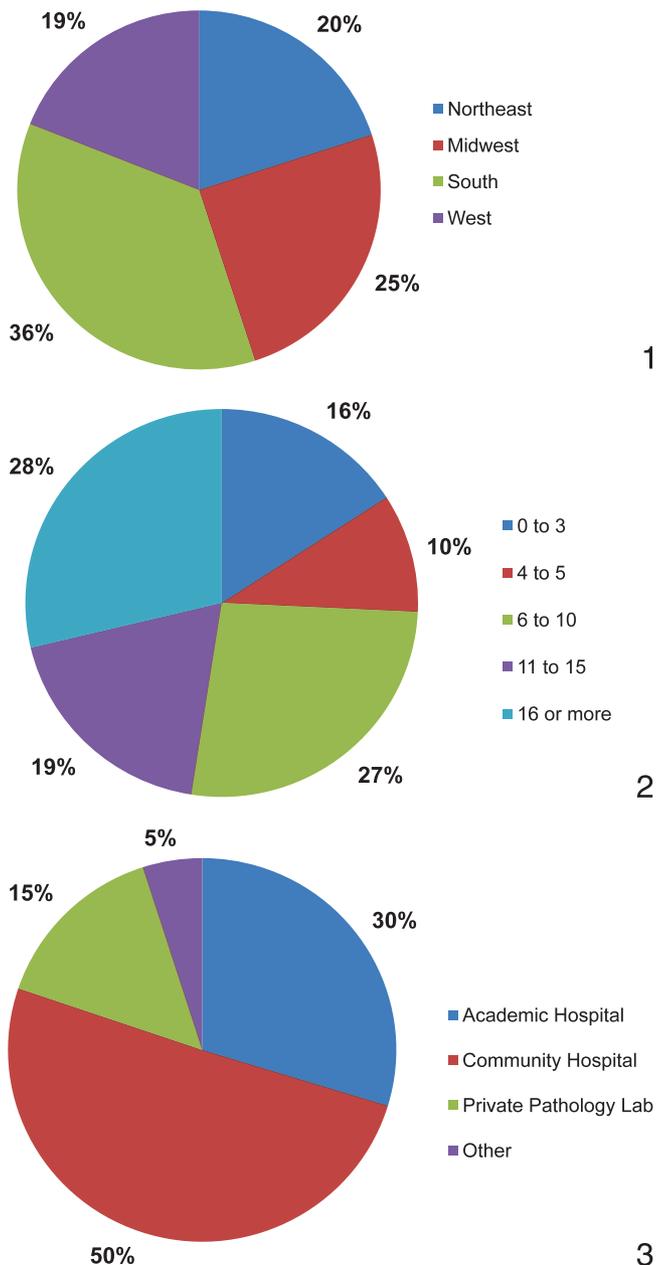


Figure 1. Geographic distribution of respondents by region.

Figure 2. Years of experience as a practicing pathologists' assistant.

Figure 3. Practice setting of respondents.

### Laboratory Administration and Management

A summary of all responses, with their corresponding value-added tasks relating to laboratory administration and management, is shown in Table 1. More than half of all respondents (56.8%) reported having a decision-making role relating to the hiring of an employee within the last year, while 17.9% had directly hired a new employee. Respondents had less involvement in the firing of employees: 18.4% had input into the firing of an employee, while 2.9% directly fired an employee.

Most respondents were involved in their department's quality assurance programs (64.0%), laboratory accreditation inspections (56.2%), and in writing internal anatomic pathology laboratory manuals (54.8%). All respondents

**Table 1. Value-Added Tasks: Administration and Management<sup>a</sup>**

Value-Added Task	Responding "Yes," No. (%)
Have you actively participated in your department's quality assurance programs?	222 (64.0)
Have you provided input in the hiring of an employee?	197 (56.8)
Have you actively participated in your department's laboratory accreditation inspections?	195 (56.2)
Have you written all or portions of an internal anatomic pathology laboratory manual?	190 (54.8)
Have you directly supervised others?	154 (44.4)
Have you initiated billing charges (ie, placed the CPT code of the specimen for the first time) for surgical specimens?	127 (36.6)
Have you performed personnel evaluations?	124 (35.7)
Have you counseled (given professional advice to) employees in the last year?	111 (32.0)
Have you directly purchased equipment and/or supplies for your department?	102 (29.4)
Have you performed safety inspections at your place of employment?	71 (20.5)
Have you been formally trained in Six Sigma, Lean, or other quality improvement programs while employed as a PA?	67 (19.3)
Have you had a formal managerial title?	66 (19.0)
Have you provided input in the firing of an employee?	64 (18.4)
Have you directly hired an employee?	62 (17.9)
Have you participated in CAP's team member training?	40 (11.5)
Have you prepared a laboratory budget?	32 (9.2)
Have you directly fired an employee?	10 (2.9)
Are you CPT-coding certified by the AAPC?	1 (0.3)

Abbreviations: AAPC, American Association of Professional Coders; CAP, College of American Pathologists; CPT, current procedural terminology; PA, pathologists' assistant.

<sup>a</sup> Respondents were asked to limit their answers to the last 1-year time frame for each question.

also showed rather high levels of involvement in performing personnel evaluations (35.7%) and employee counseling.

Direct involvement in management and supervision was also reported. Of all respondents, 44.4% reported having direct supervisory responsibilities, and 19.0% reported having a formal managerial title. Approximately 30% purchased equipment or supplies, but fewer than 10% prepared a laboratory budget.

Initiation of billing charges was reported by 36.6% of all respondents; however, only 1 respondent reported being certified in current procedural terminology coding by the American Association of Professional Coders. Approximately 20% of respondents perform safety inspections at their particular place of employment, and another 19.3% are trained in Six Sigma, Lean, or other quality improvement programs.

Table 2 summarizes the participation rates of respondents for value-added tasks according to practice setting. A higher percentage of respondents in academic and private practice settings have formal managerial titles (28.8% and 25.5%, respectively), supervise others (58.7% and 51.0%, respectively), and have involvement in the hiring of employees (input into hiring: 64.4% and 60.8%, respectively; directly hire: 23.1% and 21.6%, respectively) as compared to those in community hospitals and "other" practice settings.

Table 3 summarizes all respondents' attitudinal responses. Nearly 50% of all respondents either agreed (35.4%) or strongly agreed (13.5%) with the statement, "I would like to become more involved in management/administration," while close to 30% either agreed (17.3%) or strongly agreed (10.4%) with the statement, "I consider myself to be an administrator/manager."

### Education/Teaching

A summary of all responses with their corresponding value-added tasks relating to education/teaching is shown in Table 4. Teaching responsibilities for most

respondents is limited to training residents (36.3%), and/or serving as clinical preceptors for PA students (17.3%). Of all respondents, 4.9% taught "for credit" courses at colleges or universities. Most of those with teaching responsibilities in a classroom setting reported teaching for 6 to 8 credit hours per semester, as displayed in Figure 4.

Not surprisingly, a high percentage of respondents in academic settings were involved in the training/teaching of residents (83.7%) and PA students (31.7%). More than half (55.8%) of respondents in academic settings also reported being involved in the formal evaluation of residents. Also of interest is the 6.8%, 6.3%, and 5.9% of respondents in community, "other," and private practice settings, respectively, who reported involvement in the formal evaluation of medical residents.

All respondents were also asked if they would "like to become more involved in the training of PA students and/or pathology residents in a clinical setting," and additionally, if they would "like to become more involved in teaching for-credit courses through lecturing in a classroom setting." In reference to the training of students in a clinical setting, 42.4% agreed, while 12.7% strongly agreed. For lecturing in a classroom setting, 38.0% either agreed or strongly agreed with this statement. A solid majority either agreed (48.7%) or strongly agreed (15.9%) that they "consider themselves to be a teacher."

### Research

A summary of all responses with their corresponding value-added tasks relating to research is shown in Table 5. More than half of all respondents (52.7%) reported obtaining fresh tissue for tumor banking, and 24.5% reported involvement in a research project beyond fresh tissue procurement.

A large percentage of respondents in academic settings were involved in fresh tissue procurement for tumor banking (81.7%), and 43.3% of these individuals were involved in a research project beyond fresh tissue

**Table 2. Respondents' Participation in Value-Added Tasks According to Practice Setting<sup>a</sup>**

	Community, % (N = 176)	Academic, % (N = 104)	Private, % (N = 51)	Other, % (N = 16)
Management/administration				
Formal managerial title	11.4	28.8	25.5	12.5
Supervise others	34.7	58.7	51.0	31.3
Input in hiring	50.0	64.4	60.8	56.3
Directly hire employees	13.1	23.1	21.6	18.8
Input in firing employees	15.9	26.0	9.8	12.5
Directly fire employees	1.1	6.7	0.0	6.3
Perform personnel evaluations	33.0	39.4	41.2	18.8
Counsel employees	26.7	38.5	37.3	25.0
CPT certified	0.6	0.0	0.0	0.0
Initiate billing	39.8	34.6	31.4	31.3
Write laboratory manual	51.1	62.5	58.8	31.3
Laboratory accreditation	52.8	61.5	56.9	50.0
Quality assurance	58.5	73.1	62.7	68.8
Training in Six Sigma, etc	18.2	26.0	11.8	12.5
Laboratory budget preparation	5.1	17.3	7.8	6.3
Purchasing of equipment	22.7	39.4	33.3	18.8
CAP training	8.5	16.3	11.8	12.5
Perform safety inspections	16.5	32.7	11.8	12.5
Teaching				
Serve as a PA preceptor	13.1	31.7	5.9	6.3
Train residents	15.3	83.7	15.7	25.0
Resident evaluation	6.8	55.8	5.9	6.3
Teach for-credit courses	2.8	7.7	2.0	12.5
Research				
Authored/coauthored publication	2.3	17.3	0.0	12.5
Acknowledged in publication	4.0	23.1	0.0	12.5
Obtained fresh tissue	39.8	81.7	39.2	50.0
Research beyond obtaining tissue	13.1	43.3	15.7	56.3
Tissue bank administration	6.8	19.2	3.9	0.0

Abbreviations: CAP, College of American Pathologists; CPT, current procedural terminology; PA, pathologists' assistant.

<sup>a</sup> Questions shown are abbreviated versions of those in Tables 1, 4, and 5.

procurement. Respondents in the "other" category also reported a high percentage of involvement in research beyond fresh tissue procurement (56.3%) and in fresh tissue procurement itself (50.0%).

Roughly 39% of all respondents reported they would like to become more involved in research (32.9% agreed; 6.3% strongly agreed), and in response to the statement, "I consider myself to be a researcher," 14.4% agreed and 2.3% strongly agreed.

### COMMENT

This study provides information on the value-added benefits of PAs nationwide and shows a potential opportunity for growth and utilization of PAs. Pathologists' assistants currently have a variety of laboratory

administration and management responsibilities, and oversight of the technical staff in surgical pathology is a natural extension of these responsibilities. With 44.4% of all respondents reporting direct involvement in the supervision of others, and nearly 50% expressing interest in becoming more involved in these responsibilities, there is room for further utilization of PAs in this role. This increase in utilization and responsibility is a natural fit with the educational preparation of the PAs, which includes instruction in laboratory administration and management. In addition, students also receive instruction concerning the technical steps involved with the flow of surgical specimens through the laboratory, that is, from accessioning to sign-out.

With regard to administration, though not directly assessed in this survey, it would be useful to see the roles

**Table 3. Respondents' Attitudes Toward Increased Involvement and Personal Viewpoints in Administration/Management, Education, and Research**

Attitudinal Question	Strongly Disagree, No. (%)	Disagree, No. (%)	Agree, No. (%)	Strongly Agree, No. (%)
I would like to become more involved in:				
Management/administration	61 (17.6)	116 (33.4)	123 (35.4)	47 (13.5)
Training students/residents in a clinical setting	46 (13.3)	110 (31.7)	147 (42.4)	44 (12.7)
Teaching for-credit courses in a classroom setting	66 (19.0)	149 (42.9)	89 (25.6)	43 (12.4)
Research	61 (17.6)	150 (43.2)	114 (32.9)	22 (6.3)
I consider myself to be a/an:				
Administrator/manager	98 (28.2)	153 (44.1)	60 (17.3)	36 (10.4)
Teacher	20 (5.8)	103 (29.7)	169 (48.7)	55 (15.9)
Researcher	98 (28.2)	191 (55.0)	50 (14.4)	8 (2.3)

**Table 4. Value-Added Tasks: Education/Teaching<sup>a</sup>**

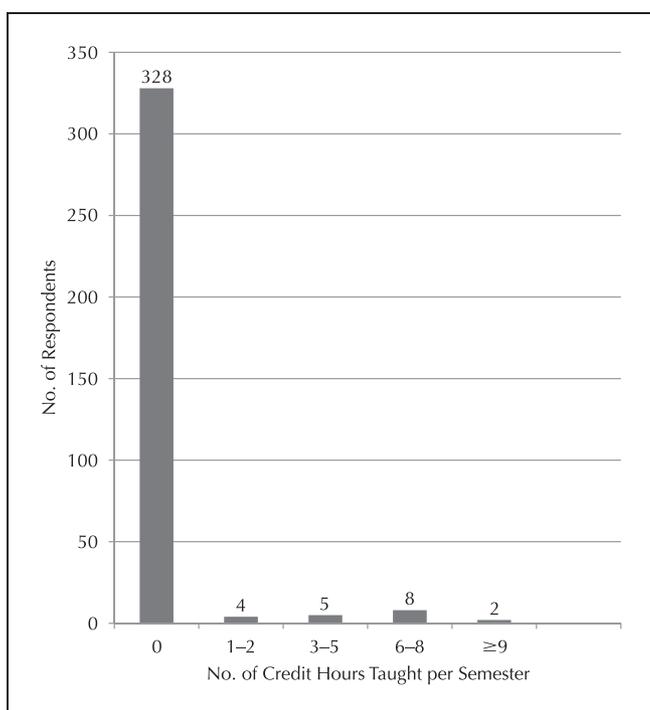
Value-Added Task	Responding "Yes," No. (%)
Have you trained pathology residents in the prosection of surgical specimens and/or autopsies?	126 (36.3)
Have you formally evaluated pathology residents?	74 (21.3)
Have you participated as a clinical preceptor in the mentoring of a PA student(s) from an NAACLS-accredited training program?	60 (17.3)
Have you taught "for credit" courses at a university/college?	17 (4.9)

Abbreviations: NAACLS, National Accrediting Agency for Clinical Laboratory Sciences; PA, pathologists' assistant.

<sup>a</sup> Respondents were asked to limit their answers to the last 1-year time frame for each question.

of PAs divided into those employed by private pathology groups contracted with institutions as compared to those employed directly by institutions themselves. From the current survey, for example, we are not able to tell if PAs employed by private pathology groups are able to supervise employees of the institution for which the group is contracted. It would also be interesting to know how many PAs actually have faculty appointments in academic centers, and the impact this may have on administrative roles.

Pathologists' assistants may also contribute to the laboratory by becoming more actively involved in resident training in the gross room, autopsy suite, and in the sampling and cutting of frozen sections. Most respondents (55.1%) indicated they would like to become more involved in the training of pathology residents/PA students in a clinical setting. However, just over a third (36.3%) of respondents reported being involved in the clinical training of residents; 21.3% reported involvement in the formal evaluation of pathology residents, and only 17.3% participated as clinical preceptors for PA students. Surgical prosection techniques, evisceration techniques, and the sampling and cutting of frozen sections are all part of the formal education of PAs. Our data indicate that



**Figure 4.** Teaching load of respondents per semester.

these skills may be underutilized, especially in nonacademic institutions. Even within academic centers, 83.7% of respondents indicate training residents, but only 31.7% are involved in the training of PA students. With the desire by PAs to become more actively involved in these areas, we believe there is room for increased involvement in the training of both residents and PA students.

The "classic" role of PAs in resident training has helped residents to "free-up" their time by reducing their gross room and autopsy suite responsibilities, allowing them to focus on other priority activities such as sign-out and participation in teaching conferences.<sup>3</sup> A number of respondents either agreed (25.6%) or strongly agreed (12.4%) in reference to the statement, "I would like to become more involved in teaching for credit courses through lecturing in a classroom setting." Currently, our data indicate that 4.9% of PAs teach at the university level, with most of these likely linked to one of the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)-accredited PA programs. As with laboratory administration and management, PAs receive formal training in education, as mandated by the NAACLS accreditation standards in the PA programs.

Pathologists, especially in academic institutions, often have research projects wherein PAs could become involved. Currently, involvement of PAs in research is rather limited beyond the obtaining of fresh tissue for tumor banking (52.7%). Few have had involvement in research projects beyond the obtaining of fresh tissue for tumor banking (24.5%), or in coauthoring publications (7.2%). This appears to be an area for potential future growth of the profession, as there is currently limited involvement, although there is a desire for increasing involvement as the data indicate (32.9% of respondents agreed with the statement, "I would like to become more involved in research," and another 6.3% strongly agreed with this statement).

A potential limitation of this study is that surveys were only administered to PAs who are members of the AAPA with fellow status. Even with the advent of a national certification program and the presence of a national professional organization, there are indeed laboratory personnel still functioning as PAs who are not members of the AAPA. Our primary focus was on the value-added benefits PAs provide, primarily in the areas of administration and management, education, and research; therefore, we feel that sampling only those PAs registered as fellow members with the AAPA is most representative of our target population.

The survey was via self-report, which is recognized as a disadvantage.<sup>12</sup> However, respondents were scattered throughout the country (44 states represented) and work in a variety of settings, including both clinical and

**Table 5. Value-Added Tasks: Research<sup>a</sup>**

Value-Added Task	Responding "Yes," No. (%)
Have you obtained fresh tissue for tumor banking?	183 (52.7)
Have you been involved in a research project beyond obtaining fresh tissue for tumor banking?	85 (24.5)
Have you been involved in tissue bank administration (ie, updating policies, financial management, personnel, compliance, accreditation, or inspection)?	34 (9.8)
Have you been acknowledged in a peer-reviewed publication?	33 (9.5)
Have you authored or coauthored a peer-reviewed publication?	25 (7.2)

<sup>a</sup> Respondents were asked to limit their answers to the last 1-year time frame for each question.

academic institutions, which we feel provides an accurate representation of the target population.

Another potential limitation of this study is the 30% response rate. The use of online surveying services kept costs to a minimum, allowing the study investigators to send the survey to all PAs registered as fellow members of the AAPA. Administering the survey to the entire target population (1169 members) may have created a bit of disconnect, as members were able to glean from the e-mail that it was sent to all fellow members of the AAPA. In addition, in the months before our survey was disseminated to fellow AAPA members, other surveys were sent out to these same members on various topics, which may have contributed to the low response rate.

While the "classic" utilization of PAs has benefited pathologists, those who have increased the scope of practice of their PAs have often been rewarded with more time for diagnostics and other pursuits.<sup>3</sup> Our data indicate that PAs are actively involved in duties outside of surgical and autopsy prosection, and provide a basis for future utilization of PAs. Further studies are needed to examine the ever-expanding role of the value-added tasks performed by PAs, and the impact this may have on improving the quality of patient care and cost reduction.

We would like to thank the Board of Trustees for their efforts on behalf of the AAPA in helping to conduct the value-added survey.

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