Context: Pay-for-performance (P4P) programs reward physicians who meet—and electronically document—specific healthcare standards during patient encounters, incentivizing certain aspects of medical care. Although such documentation can be time consuming and technology intensive, noncompliance can result in decreased physician reimbursement.

Objective: To assess the attitudes of primary care osteopathic physicians toward P4P initiatives.

Methods: In 2006, a 20-item questionnaire was mailed to 1000 osteopathic physicians randomly pulled from the American Osteopathic Association database for this cross-sectional, survey-based study. Distinctions were not made between physician practice type or group size when the mailing list was compiled.

Results: Two hundred thirty responses were received for a response rate of 23%. Of these respondents, 123 physicians (54%) were in primary care practices comprising fewer than five physicians. Of these practitioners, 94% felt unprepared for P4P initiatives, 81% did not have the resources for appropriate technological investments, and 75% required additional P4P education and training to respond to P4P initiatives. In addition, the 28% of respondents who used electronic medical records were almost five times more likely (odds ratio, 4.80; 95% confidence interval, 1.91-12.06) to report that they could meet P4P reporting requirements. The majority of survey respondents were skeptical that P4P would appropriately capture the quality of their work and did not believe that health outcomes should influence their reimbursement.

Conclusions: Although the current study’s sample size may limit generalizability, small group primary care osteopathic physicians will need assistance—both technological and educational—to meet P4P measures.

The US healthcare industry, which provided 14 million jobs in 2006,1 has remained outside the quality-driven market typical of American culture. Pay for performance (P4P), a relatively new physician-payment model, seeks to align the healthcare industry with other markets by rewarding those physicians who provide the best care.2,3 This model is expected to be the prevailing physician reimbursement program in the near future.

Although many P4P models exist, these programs generally use financial incentives to promote improved care via measurable outcome measures. Likewise, under the current Medicare concept of P4P, physicians who do not meet benchmarks for improved performance will receive decreased reimbursement for their services.4 While the impact of financial incentives is debatable,5-8 concerns remain for P4P’s unintended effects on patients and physicians.9,10

The P4P outcome measures have thus far concentrated on patients with common and often chronic conditions (eg, diabetes), regardless of comorbidities, self-care (eg, medication adherence), or financial resources, and sometimes without risk adjustment. These patients are typically treated by primary care physicians, who are therefore disproportionately impacted by early P4P measures. However, documenting improvement in P4P outcome measures requires a technological infrastructure to capture laboratory information, medical records, and radiologic data. Because of this necessary infrastructure, P4P initiatives have been focused on large healthcare entities, which can leverage internal resources to meet the technological needs and system redesign requirements fundamental to P4P quality initiatives.11

By contrast, solo or small group practice settings of fewer than five practitioners, in which approximately 67% of all ambulatory care is delivered,12 may not be able to generate the internal resources critical to meet technological system requirements.

According to the Institute of Medicine (IOM), in 5 years all physicians should be engaged in P4P programs.13 For practice groups in which more than 50% of the physicians are Medicaid recipients, P4P incentives should be implemented within 1 year.13 However, a paucity of research exists on the capability and willingness of small group practices to meet...
the P4P reporting functions proposed by Medicare and private insurers.14,15 The current study examines the self-assessed technological readiness and attitudes toward P4P measures among primary care osteopathic physicians (DOs) in small group practices.

Methods
A randomized mailing list of 1000 DO members of the American Osteopathic Association (AOA) was generated from the AOA database, which currently includes more than 37,000 member physicians.16 This list did not distinguish between DOs in primary care (eg, family practice, internal medicine, pediatrics) or specialty care or those in small or large group practices.

In October 2006, a cover letter, 20-question survey, and business reply envelope were mailed to each DO generated in the randomized list. A mailed survey was used instead of a internet-based survey to prevent bias selection of individuals with higher levels of technological comfort. The cover letter introduced the P4P initiatives and the purpose of the study. Information was included for participants to contact the survey administrator (R.G.L.) if they had any questions.

The questionnaire was developed through expert consensus in the following domains:

- type of medical practice (ie, if the respondent was a primary care physician in a practice group with fewer than 5 physicians)
- attitude toward P4P and opinions regarding theoretical outcome measures
- ability to meet existing P4P models and standards (eg, technological infrastructure, educational resources)

Initial questions were tested and revised for clarity and intent by a panel of primary care physicians before the mailing. Respondents who were not in primary care and not in small practice groups were asked to return the survey without completing the remaining 19 questions.

Surveys that were returned within 45 days were analyzed in the current study. Univariate and multivariate logistic regression analysis was performed using SPSS statistical software (version 15.0 for Windows; SPSS Inc, Chicago, Ill). The study was approved by the Christiana Care Health System Institutional Review Board.

Results
Of the 1000 surveys that were mailed, 230 surveys were returned for a response rate of 23%. Of those surveys, 123 (54%) were completed by primary care DOs in practice groups of fewer than five physicians. Because not all respondents answered each question, the total number of respondents fluctuated slightly from question to question. As such, item percentages are presented as opposed to total responses per topic or survey question.

Responses were received from 39 states: 28% from northeastern states; 20%, southern states; 35%, Midwestern states; and 16%, western states. These regional response rates accurately reflect the percent of surveys mailed to each region. According to survey responses, 80% were in practice for more than 5 years. Less than half of the respondents (40%) were optimistic about “the practice of delivering medicine.” A supermajority (68%) believed they would be significantly affected by P4P measures within 5 years.

Attitudes Toward Pay for Performance
Survey respondents were asked to consider a theoretical P4P reimbursement scheme regarding general patient care (Figure). After reviewing the proposed quality measures, 66% of respondents believed that “attention to meet these performance goals” would not cause significant change in the healthcare of their patients. However, 20% indicated that such measures would cause decreased attention to healthcare items not included in the reimbursement scheme. Less than half of responding DOs (42%) believed that there are “existing outcome measures that reflect the quality of care [they provide] to a patient.” In addition, 72% felt that health outcome measurements should not influence their reimbursement. Almost two-thirds of respondents indicated that the insurer should rate them as individuals as opposed to being pooled in their practice group. Also, only 2% of DOs surveyed believed it was fair to “withhold 20% of [his or her] normal reimbursement if [the respondent] was able to earn an additional 30%” by meeting all P4P benchmarks. The remainder of the respondents were either “unsure” (24%) or thought this scenario was unfair (74%).

Technological and Educational Preparedness
Almost all of the respondents (94%) felt that if P4P were enacted “today,” their practice would not be ready to practice, report, and meet reimbursement requirements of a P4P scheme. In addition, 60% of respondents stated that they would not be able to “include health outcomes when completing an electronic claims submission,” could not currently “comply with reporting measures,” and could not use their current billing method to monitor and track the hypothetical reimbursement scheme. In response to a question regarding the need for additional infrastructure to comply with P4P measures, 81% stated that they did not have the investment capital needed to develop such a system. Only 28% of respondents currently used electronic medical records.

A minority of physicians (12%) felt that “existing external resources” would adequately assist their practice in responding to the requirements of new P4P models. Seventy-five percent stated that “both learning additional medical information and methods” would assist their group’s ability to respond to P4P initiatives. Another 68% would find on-site training helpful for physicians and staff members (eg, physician assistants, nurse practitioners), while 54% thought off-site training (eg, confer-
enables, books, CD [compact disc] or DVD [digital video disc] course materials) would be helpful. Finally, 42% believed that low-interest loans for building the necessary technological P4P infrastructure would be helpful.

**Analysis**

Unadjusted analysis revealed that DOs whose practices used electronic medical records were almost five times more likely to report that they could meet P4P reporting requirements (odds ratio, 4.80; 95% confidence interval, 1.91-12.06). This result remained true after controlling for potentially confounding variables such as length of time in practice, positive or negative attitude toward the practice of medicine, or self-predicted time until significantly affected by P4P measures. In testing the validity of these relationships by randomly sampling 75% of the physician surveys recurrently, we found only minor changes in the odds ratios.

**Discussion**

Pay-for-performance initiatives have the potential to reshape the medical landscape by incentivizing physicians to concentrate on clear goals for common diseases. However, these initiatives may focus attention on areas that are not of primary concern during a specific visit between patient and provider—which may cause physicians to miss other important quality goals. For example, if a physician spends time helping patients modify their lifestyles to lower hemoglobin A1c levels, take beta-blockers, and have biennial retinal examinations, performance on other P4P measures (eg, Papanicolaou test) may decline. Conversely, if a patient presents with a stressful social and medical issue (eg, depression, elder abuse), the physician might spend time addressing issues that could dramatically improve a patient’s life but are not part of measurement guidelines.

The P4P measures, which will be difficult to implement for many primary care physicians, may also penalize practitioners who treat patients in underserved populations that may not have the resources to follow physician recommendations. As such, there is considerable public and private value in investing and supporting the ability of these healthcare providers to participate in a P4P program and provide “best practice” physician services to their patients.

While the survey response rate was low, the current study is the largest survey of small group DOs’ readiness to implement and attitudes toward P4P initiatives. However, several limitations of note exist. First, the randomized AOA mailing list did not distinguish between DOs based on specialty or practice size, limiting our ability to selectively survey physicians who met the study criteria. Second, responding physicians were concerned enough about P4P to respond to the survey, representing a response bias. Third, this survey did not explore the influences of regional differences, practice location, or alternate theoretical outcome measures. Finally, though DOs traditionally provide a greater proportion of primary care for patients per graduate, we did not survey allopathic physicians, who constitute the majority of physicians in the United States. Despite these limitations, our results indicate that a substantial number of smaller practices will have difficulty “buying into” P4P initiatives—both conceptually and technologically.

According to the current study, the majority of small group and solo-practice DOs felt that mandatory participation in existing P4P initiatives would place a burden on their practice but that personalized technical assistance would be beneficial. The Medicare Quality Improvement Organization Program does address the need for technical assistance, but these efforts are primarily focused on large practice groups.

Two-thirds of respondents felt that their performance should be rated individually. Although this revised model may seem ideal, many individual physicians do not encounter enough patients with certain disorders to adequately apply a statistical measure to assess performance. For example, the IOM suggests a minimum of 25 patients to generate valid and reliable estimates of individual physician care per content area. Alternatively, it has been proposed that individuals combine their outcomes with other physicians in their region to generate performance data on the treatment of patients with specific diseases. However, whether this structure would help or hinder the individual practitioner is not clear.

Previous studies indicate that small group physicians have less sophisticated electronic medical record and billing resources compared with larger entities. Although the usage rate of electronic medical records in the current study (28%) is consistent with other studies, it is unclear whether

### Table: Quality Measures

<table>
<thead>
<tr>
<th>Quality Measures</th>
<th>Compliance Required, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye examinations every 2 years for patients with diabetes</td>
<td>100</td>
</tr>
<tr>
<td>Hemoglobin A1c test every year for patients with diabetes</td>
<td>75</td>
</tr>
<tr>
<td>Mammogram every 2 years for women aged 52-69 years</td>
<td>75</td>
</tr>
<tr>
<td>Rate of hospital admissions per 1000 Medicare beneficiaries</td>
<td>75</td>
</tr>
<tr>
<td>Chest radiograph and electrocardiogram &lt;3 months after initial diagnosis of congestive heart failure</td>
<td>75</td>
</tr>
<tr>
<td>Patient satisfaction scale</td>
<td>75</td>
</tr>
</tbody>
</table>

*Figure. Theoretical quality indicator measurements (based on the Health Plan Employer Data and Information Set standardized performance measures) presented in a survey regarding pay-for-performance initiatives. Respondents, who were primary care osteopathic physicians in small group practices of fewer than five physicians, were asked to consider these measures while responding to a series of questions.*
these records will assist physicians in meeting P4P reporting measures. In the current study, analysis revealed a nearly five-fold increase in the perceived ability of these physicians to comply with P4P measures. The results of this study indicate that the development and dissemination of ambulatory quality standards alone, even when attached to monetary incentives, will not be sufficient to improve compliance with “best practices.” The healthcare community will need to ensure that small group and solo practitioners and their patients are able to meet new challenges. Many for-profit and nonprofit programs, including Bridges to Excellence Physician Office Link (http://www.bridgestoeXcellence.org/PhysicianOffice), the National Committee for Quality Assurance (http://web.ncqa.org/), and the Agency for Healthcare Research and Quality (http://www.ahrq.gov/qual/pay4per.htm), support and enact P4P measures for physicians but require that practice groups have existing P4P participation.

One way to improve physician P4P readiness could be achieved by modeling the program on existing governmental programs in nonmedical settings. For example, the US Department of Agriculture Cooperative Extension System (USDA CES), a voluntary, federally authorized, interactive program, provides education, development, and technical support adjusted to meet the specific needs of local farmers via state extension offices. By separating educational and support processes from oversight activity, the USDA CES has encouraged public use of the program. Such a service model might work well for the development of physician services to improve technological readiness for P4P and healthcare outcomes for patients.

Conclusion
Small group and solo practitioners, providing care to approximately 67% of the US population, are a cornerstone of primary ambulatory healthcare. However, whether these physicians are ready or not, P4P measures will be implemented within the next few years. As described in the current study, P4P education, technical support, and transitional assistance are necessary for small group and solo practitioners. Without concomitant support for these physicians, the effort to link compensation to quality is likely to fail to meet its own benchmarks.

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References