



### October 2007: VOLUME 5, NUMBER 2

#### *Quality Indicators in Newborn Intensive Care: Venturing into Pay for Performance?*

#### In this Issue...

Pay for performance – improving health care through incentives to clinicians and institutions who either provide quality health care or improve the quality of their health care delivery – is this concept appropriate, or even realistic, to implement in the NICU?

In this issue, we examine current pay for performance initiatives in adult inpatients; discuss the concept of incentive programs in pediatrics and the unintended (and largely undesirable) consequences of such programs; review a pilot incentive program involving more than 13,000 outpatient pediatric asthma patients; and report on a suggested approach to measuring quality and implementing pay for performance in the NICU setting.

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#### Length of Activity

1.0 hours Physicians  
1 contact hour Nurses

#### Expiration Date

October 10, 2009

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**Tracey R. Hoke, MD, MSc** has disclosed no relationship with any commercial supporters.

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The authors have indicated that there will be no reference to unlabeled / unapproved uses of drugs or products in this presentation.

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## LEARNING OBJECTIVES

At the conclusion of this activity, participants should be able to:

- Discuss the rationale for public reporting and performance incentives as a means of improving the quality of care provided to hospitalized patients with RDS
- Identify barriers to effective pay for performance programs and the unintended consequences of performance incentives
- Describe approaches to measuring quality and implementing pay for performance in the NICU

## COMMENTARY

The notion that the quality of health care delivered to hospitalized patients in the United States needs to be improved is not new.<sup>1-3</sup> From the 2001 Institute of Medicine (IOM) publication "Crossing the Quality Chasm: A New Health System for the 21st Century"<sup>1</sup> emerged a general consensus among consumers that US health care underperforms its potential. This belief culminated in a Congressional charge to the Centers for Medicare and Medicaid Services to institute "value-based purchasing" of in-hospital care before 2009.<sup>4</sup> Traditional strategies implemented in the US to improve the quality of health care include clinical mandates, measurement of performance, public reporting, and ultimately marketplace competition.<sup>3</sup> Despite limited supporting evidence, public reporting of in-hospital quality measures and pay for performance incentive programs have emerged as the two most widely adopted efforts towards a value-based ranking of US health care institutions.<sup>5</sup> Theoretically, pay for performance is seen as an improvement over traditional strategies, as it is

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intended to benefit both patients and providers, by improving health care through incentives to providers who either provide quality health care or who improve the quality of their health care delivery.<sup>6</sup> While incentive programs have not yet targeted Newborn Intensive Care, the high cost and disproportionate representation of the inpatient pediatric population, standard language and well-subscribed databases, relative strength of evidence for at least some measures of quality, and relatively few co-morbidities in this population make the setting of Newborn Intensive Care ripe for consideration for pay for performance.<sup>7</sup>

Issues of note when considering the implementation of a pay for performance program in any setting include both barriers to success and unintended consequences. A significant barrier to the implementation of incentive programs in general is resistance to participation on the part of health care providers, as traditional quality improvement efforts are considered to be of potential benefit only to consumers and patients. However, in a 2003 *New York Times* article, Reed Abelson wrote that improved health care delivery was associated with both lower complication rates (a benefit to patients) and ultimately lower reimbursements (a cost to providers).<sup>8</sup> Another issue of importance is the need to establish measures that are meaningful and evidence-based. However, in addition to the relative paucity of efficacy studies in pediatric populations, it has been recognized that efficacy studies may overestimate effectiveness, and thus contribute to the development of measures that are unachievable in real world practice.<sup>9</sup> Finally, programs that provide incentives for participation in quality improvement initiatives and achievement of accepted quality thresholds are likely to be more readily accepted by providers than those providing rewards only for the highest levels of achievement.<sup>10</sup>

Perhaps of even greater concern than the barriers to success of incentive programs are the unintended, and often undesirable, consequences of such programs. Incentive programs have been shown to promote both errors of overuse and underuse of care, resulting in the neglect of unrewarded aspects of care in an attempt to be compliant with known measures.<sup>11</sup> In addition, "gaming" the system through focused coding or documentation and omission of poor outcomes in reporting may result in increased provider rewards, but only nominal adherence to performance measures.<sup>12</sup> Thus, while it may be true that incentives can be associated with better documented compliance with stated quality measures, it would be of interest to report on performance in terms of both rewarded and unrewarded aspects of health care. In addition, the cost associated with the abstraction and management of data, the development and implementation of process initiatives, validation of reported performance, and the effort aimed at interpretation and marketing of publicly available data must be taken into account. Further, the issue of greatest public health concern is that incentives will promote "patient profiling" through the application of measures either not adjusted or poorly adjusted for clinical risk, resulting in the avoidance of acceptance or treatment of our sickest patients.<sup>12</sup>

Specific issues affecting the design of pay for performance programs in Newborn Intensive Care include population differences in gestational or chronologic age, the presence or absence of congenital anomalies, variance in severity of illness, variable measures of parent satisfaction despite similar clinical outcomes, and variability in regional and transport practices that require collaborative quality improvement measures and assessments across multiple hospitals.<sup>13,14</sup> While pay for performance programs may soon target Newborn Intensive Care, there remain many unsolved challenges in this arena regarding unrewarded aspects of care, risk adjustment based on population characteristics, and the cost associated with documentation and reporting.

## PUBLIC REPORTING AND PAY FOR PERFORMANCE

Lindenauer PK, Remus D, Roman S, et al. **Public reporting and pay for performance in hospital quality improvement.** *N Engl J Med.* 2007;356:486-496.

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The authors report on the compliance of 613 hospitals with 10 individual and 4 composite measures of the quality of hospital care in an adult population. All hospitals were actively engaged in voluntary reporting of hospital care quality measures through a national public reporting initiative promoted by the Hospital Quality Alliance.<sup>15</sup> Simultaneously, 207 hospitals participated in a pay for performance initiative - the CMS/Premier Hospital Quality Incentive Demonstration, sponsored by the Centers for Medicare and Medicaid Services.<sup>16</sup> This study was designed to compare compliance rates between hospitals engaged only in public reporting of quality improvement measures, and those also participating in a performance incentive initiative.

Of the 10 quality measures assessed, 5 were related to the percentage of hospitalized patients receiving recommended care for acute myocardial infarction, 2 were related to the percentage of inpatients receiving recommended care for heart failure, and 3 were related to the percentage of inpatients receiving recommended care for pneumonia. In addition, composite process measures of the recommendations for each of the 3 conditions were calculated, along with a single composite of all 10 measures. Hospitals were required to have a minimum of 30 cases per condition annually to be eligible for the demonstration project, as well as an additional 2% reimbursement for performance in the top decile on a composite measure of quality for a given year.

Over the two-year study period, both public reporting hospitals and public reporting plus pay for performance hospitals showed improvement in compliance with each of the 10 individual and 4 composite measures of quality of care. In addition, hospitals engaged in public reporting and pay for performance had a greater change in rate of compliance with all quality improvement measures assessed than hospitals engaged in public reporting alone. Of note, and not surprisingly, baseline performance was inversely associated with improved compliance. Of the 207 pay for performance hospitals, improvement in the composite of all 10 measures was 16.1% for hospitals in the lowest quintile of baseline performance, and 1.9% for those in the highest quintile ( $P < 0.001$ ). Following adjustment for differences in baseline performance and other hospital characteristics, pay for performance was associated with improved compliance rates ranging from 2.6% to 4.1% over the two-year period of study. Striking improvements were made by pay for performance hospitals in pneumococcal vaccination among patients with pneumonia, all 4 composite process measures, and with additional appropriateness of care measures (percentages of patients receiving all recommended treatments/interventions for a given condition).

The authors conclude that "hospitals engaged in both public reporting and pay for performance achieved modestly greater improvements in quality than did hospitals engaged in public reporting alone". While it is true that pay for performance hospitals achieved improvements in the documentation of all process measures of quality studied, it is important to remember that documentation does not always equal adherence, and process improvement does not always equal improved clinical outcome. However, the measures chosen for assessment in this study represent clinical recommendations based on the strongest level of research evidence linking treatment/intervention and clinical outcome, suggesting that improved compliance with recommendations is likely associated with improved patient outcome. The authors note that it may be difficult to replicate such a paradigm in pediatrics, as the lion's share of recommendations in that specialty are the result of expert opinion based on experience and some (but not often) randomized clinical trial data that includes measurement of clinical outcome. As clinicians consider developing pay for performance in newborn intensive care, it is



important to recognize that all meaningful quality measures must link to clinical outcome data.

## PAY-FOR-PERFORMANCE IN PEDIATRICS

Chien AT, Dudley RA. **Pay-for-performance in pediatrics: proceed with caution.** *Pediatrics*. 120(1): 186-188.

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The authors discuss two barriers specific to the development and implementation of incentive programs in pediatrics. This first is the relatively low prevalence of disease in the pediatric population, and the inverse relationship between low prevalence and sample size required to show improved clinical outcome. They assert that those who develop pediatric incentive programs will need to pay close attention to methods of aggregating measures across conditions, and institute measures that reflect more general processes of care, perhaps with a focus on patient/family-centeredness or coordination of care. The second barrier is the relative paucity of evidence-based quality of care measures in pediatrics. The authors point out that reliance on consensus-based recommendations and expert opinion may lead to measures that are not necessarily meaningful, realistic, or achievable by providers working in a wide range of settings, and suggest that special consideration be given to solo/small group settings and settings with reduced access to resources.

The authors also discuss the unintended and undesirable consequences of the development and implementation of incentive programs in general. One is that performance incentives may improve documentation without changing the actual quality of care. The combination of what is generally known as "gaming" (the practice of consciously documenting in a way that improves the appearance of compliance without linking compliance to improved health), plus neglect of the aspects of care that are not rewarded, creates concern that providers and/or institutions could be rated as extremely compliant via a given set of quality indicators without actually improving the health of their patients. A second concern is that performance incentives may reward those already doing well, while punishing those needing the most assistance. At least one study suggests that the vast majority of additional CMS reimbursements to date have gone to groups/institutions with the highest baseline performance and lowest relative levels of improvement.<sup>17</sup> A third undesirable consequence is that performance incentives may reduce the willingness of providers and/or institutions to care for our sickest patients and/or patient groups with demographic reasons to have poorer clinical outcome, such as reduced access to care or the inability to carry out follow-up recommendations. A result of the systematic assessment of measures that are not adjusted or poorly adjusted for clinical risk may create what amounts to "patient profiling", and may promote the avoidance of acceptance or treatment of either the most complicated patients or the patient population with the least resources.

## PAY FOR PERFORMANCE IN OUTPATIENT PEDIATRICS

Mandel KE, Kotagal, UR. **Pay for performance alone cannot drive quality.** *Arch Pediatr Adolesc Med*. 2007;161: 650-655.

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The authors report on the experience of a combined guidelines-based collaborative and a performance-based incentive program in outpatient pediatric asthma practice. The primary objective of the study was to determine whether aligning design characteristics of a pay for performance program with the objectives of an outpatient

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asthma improvement collaborative would build improvement capability and accelerate improvement in health care as measured by adherence to recommendations of the collaborative. An analysis of the impact of pay for performance on adherence was conducted across 44 pediatric practices (165 providers) and more than 13,000 children with asthma within greater Cincinnati. Primary objectives of the asthma pay for performance program were to reward measurable improvements in asthma care achieved at both the network and practice level, to accelerate practice engagement in quality improvement work, to support the business case for quality improvement, to obtain experience designing and administering pay for performance programs, and to influence the design of future pay for performance programs. Adherence measures included influenza vaccination percentage, controller medication percentage for children with persistent asthma, and written self-management plan percentage.

The asthma collaborative included the following process interventions: multidisciplinary teams at each practice (physician, nurse or medical assistant, and office manager); concurrent data collection at the encounter through use of an asthma decision support tool; asthma population identification based on chart review confirmation of administrative data; web-based asthma registry with real-time reporting capabilities; transparent comparative practice data production; practice workflow redesign to reduce missed opportunities to capture data at the patient encounter; a patient self-management collaborative; an influenza vaccine improvement collaborative; and multiple network meetings and conference calls to promote communication and collaboration among practices.

The incentive program provided each of the 44 practices with the potential to earn a maximum of a 7% annual fee schedule increase. The distribution of increases was as follows: those with an increase of 2%, 3 (7% of practices); an increase of 4%, 13 (30%); an increase of 5%, 2 (5%); an increase of 6%, 14 (33%); and an increase of 7%, 11 (26%). Network performance exceeded thresholds for both the influenza vaccine measure (adherence 54%, target 30%) and the controller medication measure (adherence 90%, target 70%). Among practices considered for additional rewards, 40 (100%) completed the requirement to participate in an asthma registry, and 27 (68%) captured key process and outcome data on at least 85% of the asthma population. Among the 27 practices meeting eligibility criteria for the highest level of reward, 26 (96%) achieved the 75% threshold for the controller medication measure, 19 (70%) achieved the 80% threshold for the written self-management plan measure, and 18 (67%) achieved the 50% threshold for the influenza vaccine measure.

In addition, between October 1, 2003, and November 30, 2006, the cumulative percentage of the network population receiving "perfect care" (defined as a composite measure of a written self-management plan and controller medications if classified with persistent asthma) increased from 4% to 88%, with 18 of 44 practices (41%) achieving a perfect care rating of 95% or greater. The percentage of the network asthma population receiving the influenza vaccine increased from 22% at baseline (2003- 2004 season) to 41% for the 2004-2005 season, to 62% for the 2005-2006 season, with 7 of 44 practices (16%) achieving an influenza vaccination percentage of 80% or greater for the 2005-2006 season.

The authors conclude that "linking design characteristics of a pay for performance program to a collaborative focused on improving health care for a defined population, building improvement capability, and driving system changes at the provider level resulted in substantive and sustainable improvement". By coupling pay for performance with a multidisciplinary approach to quality improvement through process interventions, this study does indeed show improved adherence with evidence-based guidelines for improving health care. In addition, the authors suggest several key design principles that may overcome the barriers and unintended consequences of incentive programs in pediatrics. These include: allocating a portion of pay for performance funds to reward all providers for committing to and investing resources toward improvement efforts (regardless of provider-specific performance); rewarding all providers for achieving group-level performance thresholds before rewarding provider-specific performance; rewarding providers for the pursuit of evidence-based interventions that build improvement capability and sustainability before rewarding provider-specific performance; and allocating only a portion of pay-for-performance funds to reward outstanding

provider-specific performance.

## PAY FOR PERFORMANCE IN NEWBORN INTENSIVE CARE

Profit J, Zupancic JAF, Gould JB, Petersen LA. **Implementing pay-for-performance in the neonatal intensive care unit.** *Pediatrics*. 2007;119: 975-982.

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Although pay for performance approaches have not yet been applied in newborn intensive care, this arena is a prime target for such programs because of the high cost of newborn intensive care, the availability of standardized and well-subscribed databases, the relative strength of clinical outcome data, the relatively high degree to which services are utilized by the overall pediatric population, and the relatively low rate of comorbidities with respect to adult inpatient populations. The authors, reporting on an approach to measuring quality and implementing pay for performance in the NICU, note that provider involvement in defining and measuring quality is central to pay for performance, as provider opposition to such programs is often grounded in concern regarding the basic validity, fairness, and meaningfulness of assessment methods.

The authors suggest that quality measures in newborn intensive care be developed as composite indicators derived by expert opinion based on measures identified in an evidence-based manner, ie, through the formal interrogation of existing clinical and research databases. They assert that the design of quality measures for newborn intensive care should focus on a multidimensional approach, with emphasis on structure, process, and outcome measures.<sup>18</sup> Further, they outline a strategy to develop new composite measures, including a 10 step building process designed by the Organization for Economic Cooperation and Development (OECD)<sup>19</sup> that emphasizes judgments regarding the relative importance of the individual measures that contribute to a composite. These steps include, in sequence: the development of a theoretical framework, measure selection, initial data analysis, imputation of missing data, normalization, weighting and aggregation, uncertainty and sensitivity analysis, linkage to other variables, deconstruction of the composite indicator, and presentation and dissemination. In describing the advantages of this strategy, the authors state that the OECD guidelines both ensure transparency of process, and promote internal and external statistical and methodological consistency.

In addition, Profit et al outline 3 challenges specific to newborn intensive care. First, the relative diversity of the population in terms of gestational age, chronologic age, presence or absence of congenital anomalies, and need for surgery requires that measures be developed for patient groups that are commonly represented (very low birth weight infants, moderately premature infants, and term infants). Second, quality assessment in the group of infants at the limit of viability (less than 25 weeks) may require measures focused more on parent education and satisfaction than clinical outcome. Finally, the authors note that bias may be introduced by current transport practices, requiring that tracking across hospital stays at multiple institutions become more organized.

The incentive design the investigators ultimately promote involves a combination of competitive/benchmarking and noncompetitive comparisons, and a payment structure that involves bonus disbursement of at least 5% of capitation income, at least yearly, to groups of providers. They assert that an assessment of quality should incorporate a range of dimensions, with indicators that are valid, reliable, feasible to collect, and relevant to important domains of care. Further, they suggest a phased approach to implementation, whereby well-funded pilot incentive programs utilizing only a few specific measures are implemented in select institutions, with the expectation that both measures and programs are dynamic in nature, and thus open to ongoing evaluation and revision as clinical outcome data

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are refined and the methodology of quality measurement matures.

The IOM has suggested that quality assessment should reflect health care delivery in the domains of patient safety, effectiveness, efficiency, patient-centeredness, timeliness, and equity.<sup>1</sup> Profit et al assert that the dimensions of the quality of health care delivered in newborn intensive care may also be described by physical and organizational composition (structure of care), by the clinical care interactions between patients/parents and providers (process of care), and by clinical outcomes – mortality, morbidity, parent/provider satisfaction (outcomes of care). They conclude that a framework for quality measurement that includes both the IOM dimensions and structure/process/outcomes dimensions is best suited to address current weaknesses in the application of individual provider performance measures, primarily the temptation by providers to avoid the acceptance of and/or treatment of our sickest patients. This concept of provider development of multidimensional measures sets the stage for both the proactive involvement of newborn intensive care providers in the process of quality measurement and comparison, and the development of a process model that could ultimately be applied across pediatrics.

## REFERENCES

1. Institute of Medicine. Crossing the quality chasm: a new health system for the 21st century. Washington, DC: National Academies Press, 2001.
2. National Healthcare Quality Report, 2005. Rockville, MD: Agency for Healthcare Research and Quality, 2005. Accessed September 25, 2007. Available at: [www.ahrq.gov/qual/nhqr05/nhqr05.htm](http://www.ahrq.gov/qual/nhqr05/nhqr05.htm).
3. Deficit Reduction Act of 2005. S. 1932 Section 5001 Public Law No.109-171.
4. Chassin MR, Galvin RW. [The urgent need to improve health care quality: Institute of Medicine National Roundtable on Health Care Quality](#). *JAMA* 1998;280:1000-1005.
5. Dudley RA, Frolich A, Robinowitz DL, Talavera JA, Broadhead P, Luft HS. Strategies to support quality-based purchasing: a review of the evidence. Rockville, MD: Agency for Healthcare Research and Quality, July 2004. (AHRQ publication no. 04-0057.)
6. Millenson ML. [Pay for performance: the best worst choice](#). *Qual Saf Health Care* 2004;13:323-324.
7. Profit J, Zupancic JAF, Gould JB, Petersen LA. [Implementing pay-for-performance in the neonatal intensive care unit](#). *Pediatrics* 2007;119:975-982.
8. Abelson R. Hospitals say they're penalized by Medicare for improving care. *New York Times*. 5 December 2003:A1.
9. Mittman BS. [Creating the evidence base for quality improvement collaboratives](#). *Ann Intern Med*. 2004;140(11):897-901.
10. Mandel KE, Kotagal, UR. [Pay for Performance Alone Cannot Drive Quality](#). *Arch Pediatr Adolesc Med*. 2007;161:650-655.
11. Werner RM, Asch DA. [The unintended consequences of publicly reporting quality information](#). *JAMA*. 2005;293:1239-1244.
12. Chien AT, Dudley RA. Pay-for-Performance in Pediatrics: Proceed With Caution. *Pediatrics*. 2007; 120(1): 186-188. *Abstract Unavailable*.
13. Wirtschafter DD, Powers RJ. [Organizing regional Perinatal quality improvement: global considerations and local implementation](#). *NeoReviews*. 2004;5:e50-e59.
14. Horbar JD, Plsek PE, Leahy et al. [The Vermont Oxford Network: Improving Quality and Safety Through Multidisciplinary Collaboration](#). *NeoReviews*. 2004;5:42-49.
15. Hospital Quality Alliance home page. Accessed September 25, 2007. Available at: [www.aha.org/aha/key\\_issues/qualityalliance/index.html](http://www.aha.org/aha/key_issues/qualityalliance/index.html).
16. CMS/Premier Hospital Quality Incentive Demonstration. Charlotte, NC: Premier, 2006. Accessed September 25, 2007. Available at: [www.premierinc.com/all/quality/hqi/](http://www.premierinc.com/all/quality/hqi/).
17. Rosenthal MB, Frank RG, Li Z, Epstein AM. [Early experience with pay-for-performance: from concept to practice](#). *JAMA*. 2005;294:1788-1793.
18. Donabedian A. Evaluating the quality of medical care. *Milbank Mem Fund Q*. 1966;44 (suppl):166-206. *Abstract Unavailable*.
19. Nardo M, Saisana M, Saltelli A, Tarantolo S, Hoffman A, Giovanini E. Handbook on Constructing Composite Indicators: Methodology and User Guide. Paris, France: Organisation for Economic Co-operation and Development; 2005. Accessed September 25, 2007. Available at: [www.oilis.oecd.org/oilis/2005doc.nsf/LinkTo/std-doc\(2005\)3](http://www.oilis.oecd.org/oilis/2005doc.nsf/LinkTo/std-doc(2005)3)

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This activity has been developed for neonatologists, NICU nurses and respiratory therapists working with neonatal patients. There are no fees or prerequisites for this activity.

### Learning Objectives — [back to top](#)

At the conclusion of this activity, participants should be able to:

- Discuss the rationale for public reporting and performance incentives as a means of improving the quality of care provided to hospitalized patients with RDS
- 

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Identify barriers to effective pay for performance programs and the unintended consequences of performance incentives

- Describe approaches to measuring quality and implementing pay for performance in the NICU

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- **Edward E. Lawson, MD** has indicated a financial relationship of grant/research support from the National Institute of Health (NIH). He also receives financial/material support from Nature Publishing Group as the Editor of the *Journal of Perinatology*.
- **Christoph U. Lehmann, MD** has received grant support from the Agency for Healthcare Research and Quality and the Thomas Wilson Sanitarium of Children of Baltimore City.
- **Lawrence M. Noguee, MD** has received grant support from the NIH.
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