
Pay-for-Performance in Nursing Homes

Becky A. Briesacher, Ph.D., Terry S. Field, D.Sc., Joann Baril, and Jerry H. Gurwitz, M.D.

Information on the impact of pay-for-performance programs is lacking in the nursing home setting. This literature review (1980-2007) identified 13 prior examples of pay-for-performance programs in the nursing home setting: 7 programs were active as of 2007, while 6 had been terminated. The programs were mostly short-lived, varied considerably in the choice of performance measures and pay incentives, and evaluations of the impact were rare.

REVIEW OF THE LITERATURE

More than 3 million frail and disabled individuals will rely on services provided by a nursing home at some point during the year, and among them 1.5 million will stay long enough to consider the nursing home their main residence (Doshi, Shaffer, and Briesacher, 2005). These individuals, their families, and their friends count on nursing homes to provide care that is of high quality. However, as of 2006, one in five nursing homes nationwide was cited for serious deficiencies—deficiencies that caused actual harm or placed residents in immediate jeopardy (Centers for Medicare & Medicaid Services 2006; U.S. Government Accountability Office, 2007).

One strategy for improving the quality of care in nursing homes is to link health care spending to quality and efficiency through

pay-for-performance programs. Pay-for performance is a reimbursement approach designed to reward health care providers for achieving high levels of performance, or improvements in performance. This approach is in contrast to fee schedules of flat rates per service, where reimbursement is the highest when the most services are rendered, regardless of improved patient outcomes. In 2001, the Institute of Medicine identified payment systems based on only the quantity of care provided as a barrier to quality improvement and recommended that health care purchasers adopt reimbursement policies linked to quality improvement (Committee on Quality of Health Care in America and Institute of Medicine, 2001). Approximately one-half of all Medicaid Programs currently operate some type of pay-for-performance program, and 85 percent have plans to do so within 5 years (Kuhmerker and Hartman, 2007). Pay-for-performance programs in the nursing home setting have been rare; two recent surveys identified only four active programs (Georgia, Iowa, Vermont, and Utah) (White et al., 2006; Kuhmerker and Hartman, 2007). However, this will soon be changing as CMS, the largest purchaser of nursing home services (about \$64 billion per year), will be sponsoring a pay-for-performance initiative through the Nursing Home Value-Based Purchasing Demonstration (Centers for Medicare & Medicaid, 2008, 2006). Beginning in the summer of 2009, the pay-for-performance demonstration will include as many as 50 nursing homes per State in 4 host States.

The authors are with the University of Massachusetts Medical School and Meyers Primary Care Institute, Worcester, Massachusetts. The research in this article was prepared with support from Commonwealth Medicine, the public service healthcare consulting division of the University of Massachusetts Medical School. The statements expressed in this article are those of the authors and do not necessarily reflect the views or policies of the University of Massachusetts Medical School, Meyers Primary Care Institute, or the Centers for Medicare & Medicaid Services (CMS).

Information on pay-for-performance programs in the nursing home setting is lacking, both on details of the programs as well as evaluations of any impacts. Research conducted in other health care settings find inconsistent improvements with pay-for-performance programs, both in terms of process measures of care (e.g., screening rates) and patient outcomes (Rosenthal and Frank, 2005; Petersen et al., 2006; Felt-Lisk, Gimm, and Petersen, 2007; Gilmore et al., 2007). For example, a recent analysis of pay-for-performance in the acute care setting found no significant differences in the quality of care or outcomes of patients with myocardial infarctions (Rosenthal and Frank 2005; Glickman et al., 2007). The lack of significant quality improvements in these different settings raises questions about the potential for similarly lackluster results in nursing homes. The objective of this study was to review the empirical literature to characterize current and former pay-for-performance programs in the nursing home setting and to compare the performance measures, pay incentives, and any evaluations of the impact of these programs.

METHODS

Conceptual Framework

Our conceptual framework for this review is an adaptation of the work by Rosenthal and Frank (2006). Within that framework, improving quality of care is addressed through a payment system that makes increasing quality in the best financial interest of the provider of care. However, a successful payment system requires good information to create a reward that is commensurate with the costs to the provider of increasing quality. Since information on the true costs of increasing

quality is often lacking, a poorly designed payment system may have no effect on quality or even unintended negative effects. Thus, we probed the literature for valid evidence of the overall effectiveness of pay-for-performance in the nursing home setting. In addition, we were also interested in documenting the design elements of prior pay-for-performance programs in nursing homes to characterize key elements and current trends.

SEARCH STRATEGY

We conducted searches of the electronic database MEDLINE and the Internet using Google U.S. Government Search for empirical data describing pay-for-performance programs in nursing homes. In addition, we interviewed key stakeholders to supplement the search. The review covered the period 1980-August 2007. The initial search strategy for MEDLINE included the subject heading *nursing homes* in combination with the term *quality* and the reimbursement terms of *pay-for-performance*, *value*, *purchasing*, *incentive*, or *payment*. As primary documents or review articles were identified, we scanned the text for mention of programs, and reviewed the reference lists for additional sources. A modified search was applied for the Web search, which was limited to Web sites with downloadable files (Adobe Acrobat[®] PDF, Microsoft Word[®] or Microsoft PowerPoint[®]). Lastly, five interviews were conducted with key stakeholders from academia, Minnesota's department of human services, CMS, MedPAC, and the Department of Veterans Affairs to learn about additional programs. All investigators developed the search strategy, retrieved the documents and extracted the data, conducted the interviews, and made the final selection of programs.

STUDY SELECTION

The pay-for-performance programs were selected if they met four criteria: (1) the program had been implemented as a functioning payment system, (2) the program was set in the nursing home setting, (3) the program used measures of performance related to quality rather than only efficiency, and (4) the performance incentive was financial, rather than recognition-based. Programs were excluded if the financial incentives were not tied to reimbursement rates, but instead awarded as grants. Those programs generally award the grants retroactively so the relationship between performance and financial incentives is less clear. For instance, in Vermont's Gold Star program, high performing nursing homes are eligible for quality awards of \$25,000 but the award is not guaranteed. In addition, we limited the review to only programs conducted in the U.S.

RESULTS

The Medline search identified 75 articles related to pay-for-performance in nursing homes and the Web search identified 134 online documents. Of these, only 19 related to our study objective, and 18 met the inclusion criteria. A manual review of these documents and the interviews produced four more programs. Key characteristics of the final programs are summarized in Table 1.

We identified 13 pay-for-performance programs in the nursing home setting between 1980 and 2007: 7 programs were currently active as of 2007, while 6 had been terminated. All of the current programs were relatively new, with the oldest program dating back to 2002 (Iowa's Accountability Measures Incentive Program). Nearly all of the terminated programs were short-lived. For example, Texas

implemented a performance-based add-on payment program for nursing homes in 2001 but 2 years later ended the program due to budget cuts (Carter, 2002). The reasons for the other terminations were not documented. Most (5 of 13) of the programs were set in the Central/Midwestern States, 4 in the South, 3 in the West, and only 1 in the Northeast. Participation was voluntary in all programs except for two, Georgia and Iowa. Figure 1 shows the distribution of active pay-for-performance programs in nursing homes from 1980 to 2007.

EVALUATIONS

Only 4 of the 13 programs evaluated the impact of the program, and among them only one provided sufficiently robust evidence for drawing any clear conclusions. In the early 1980s, 32 San Diego nursing homes were randomly assigned into a control group or an experiment group with incentive payments for: (1) accepting patients needing the most functional assistance, (2) improved patient functional status within 90 days of admission, and (3) prompt discharges of patients who remained out of the facility for at least 90 days (Norton, 1992; Trisolini et al., 2006). The study tracked over 11,000 nursing home residents for 2-1/2 years, and found the incentive payments associated with beneficial effects. Nursing homes eligible for the incentive payment program were more likely to admit individuals with severe disabilities and more likely to send individuals home or to lower skilled facilities than nursing homes receiving only the per diems. In addition, residents in the experiment group nursing homes were less likely to be hospitalized or to die than those in the control group homes. However, this promising result came at a cost—the average daily cost to Medicaid rose by about

Table 1

Description of Pay-for-Performance Programs in Nursing Homes

Program Name	Participants	Measures	Incentive	Performance Status
Current Programs				
Georgia Nursing Home Quality Initiative, P4P component implemented in 2007(Petersen et al., 2006; Georgia Department of Community Health, 2007a; Georgia Department of Community Health, 2007b; Georgia Department of Community Health, 2007c)	All NHs required to participate	<p>8 measures:</p> <ul style="list-style-type: none"> • Family satisfaction • Employee satisfaction • Nursing retention • Nursing assistant retention • Pressure sores • Physical restraints • Pain in long-stayers • Pain in short-stayers 	<p>In 2007, 1% increase for participation (defined as meeting standards for nurse to patient ratio and data collection).</p> <p>Up to 2% increase in rate following state review of program participation and completion of goals.</p>	In 2007, 78% of NHs received incentive payments.
<i>Stated Goal: to promote successful measures to monitor quality; raise quality of care</i>				
Iowa Accountability Measures Incentive Program, implemented in 2002(Kane, Arling, and Mueller, 2007; Kuhmerker and Hartman, 2007)	All NHs required to participate except for measure related to resident satisfaction	<p>10 measures:</p> <ul style="list-style-type: none"> • Deficiency free survey • Regulatory compliance • Nursing hours • Resident satisfaction • Resident Advocate Committee • Employee retention • Occupancy rates • Administrative costs • Special licensure • Medicaid utilization 	<p>In 2002, \$2.86 per day</p> <p>Increase of 1%, 2%, or 3% of daily per diem of direct and non-direct reimbursement based on performance.</p>	In 2005, 87% NHs received incentive payments.
<i>Stated Goal: Achievement suggests that quality is an essential element in the facility's delivery of resident care</i>				
Kansas Nursing Facility Quality and Efficiency Outcome Incentive Factor, implemented in 2005 (Kansas Department on Aging, 2007)	Open to all NHs in State	<p>6 quality measures:</p> <ul style="list-style-type: none"> • Direct care staffing • Direct care turnover • Staff retention • Operating costs • Total and Medicaid occupancy • Deficiency free survey 	Incentive payments of \$1.00 to \$3.00 added to daily per diem.	In 2006, 38% of NHs received incentive payments.
<i>Stated Goal: to provide a monetary incentive for favorable outcomes</i>				

Table 1—Continued
Description of Pay-for-Performance Programs in Nursing Homes

Program Name	Participants	Measures	Incentive	Performance Status
Minnesota Quality Add-on, implemented in 2003(Nursing Facility Rates and Policy Division, 2004; Nursing Facility Rates and Policy Division, 2006; Held, 2007; Minnesota Department of Human Services, 2006)	Open to all NHs in State	<p>7 measures:</p> <ul style="list-style-type: none"> • Staff retention • Staff turnover • Temporary staff • Quality indicators from MDS • Deficiency free survey • Resident quality of life • Consumer satisfaction 	<p>In 2007, bonus payment of up to 2.4% of daily per diem rate.</p> <p>No bonus payment for quality score less than 40%.</p>	<p>Implementation process encountered opposition from nursing home industry.</p> <p>Design of final measures under negotiation.</p> <p>Preliminary measures in use.</p>
<i>Stated Goal: Quality improvement, increase efficiency, and rebalance long-term care</i>				
Ohio Quality Add-on, implemented in 2007(Ohio Department of Job and Family Services, 2006; Inrator, Grabowski, and Zinn, 2007; Kuhmerker and Hartman, 2007; Rosenthal and Camillus, 2007)	Open to all regular NHs in State	<p>6 measures:</p> <ul style="list-style-type: none"> • Deficiency free survey • Resident/family satisfaction • Nurse staffing • Employee retention • Occupancy rates • Medicaid utilization 	In 2007, \$3 a day increase to per diem.	N/A
Oklahoma Focus on Excellence, implemented in 2007(Oklahoma Health Care Authority, 2007)	Open to all regular NHs in State	<p>10 measures:</p> <ul style="list-style-type: none"> • Quality of life • Resident/family satisfaction • Employee satisfaction • Technician/assistant turnover and retention • Licensed nurse turnover and retention • State survey compliance • Person-centered care • Clinical outcomes • Direct care staffing hours • Medicaid occupancy and Medicare utilization ratio 	1% participation bonus for the first year beginning July 1, 2007, and provider bonuses of up to 4% of per diem rate beginning on October 1, 2007.	N/A
Utah Nursing Home Quality Improvement Initiative, implemented in 2004 (Kuhmerker and Hartman, 2007)	Open to all NHs in State	<p>3 measures:</p> <ul style="list-style-type: none"> • Deficiency free survey • Substandard quality of care citations • State-developed CAHPS-measure 	<p>Payments of between \$0.50 and \$0.60 per patient per day.</p> <p>State allocated \$500,000 for bonus payments.</p>	Program performance not publicly available

Table 1—Continued
Description of Pay-for-Performance Programs in Nursing Homes

Program Name	Participants	Measures	Incentive	Performance Status
<p>Terminated Programs</p> <p>Colorado, Quality of Care Incentive Payment Program, implemented in 1996 and ended in 2002 (Office of Policy and Research, 1999)</p> <p><i>Stated Goal: Establishes a resident-centered quality improvement program to improve the quality of life in nursing facilities through resident participation</i></p>	<p>Open to all approved NHs</p> <p>In 1996 164 plans approved, 5 denied</p>	<p>2 measures:</p> <ul style="list-style-type: none"> • Deficiency free survey • Quality improvement plan 	<p>Per diem increase from \$1 to \$4 depending on # of points</p>	<p>Program costs were \$3 million in FY 96-97, but the program was repealed when State allowable costs increased.</p> <p>In 1998, 30% of incentive payment was based on facility inspection (0-2 deficiencies) and 70% on approved plan.</p>
<p>Florida, Long-term Care Reimbursement Plan, implemented in 1983 and ended in 1996(Agency for Health Care Administration, 2006)</p> <p><i>Stated Goal: To encourage high-quality care while containing costs</i></p>	<p>Open to all NHs in State</p>	<p>2 measures:</p> <ul style="list-style-type: none"> • No class I or class II deficiencies, or uncorrected class III deficiencies • Substantial compliance with state and federal standards. 	<p>Incentive factor provided to NHs with per diems that were below class ceilings and had licensure ratings of standard or superior quality of care.</p>	<p>Program performance not publicly available</p>
<p>Illinois Quality Incentive Program, implemented in 1985 and ended in 1992 (Geron, 1991)</p> <p><i>Stated Goal: Reward facilities for improving resident care beyond minimum State and Federal standards</i></p>	<p>Open to all NHs in State</p> <p>91% of NHs participated</p>	<p>6 measures:</p> <ul style="list-style-type: none"> • Structure and environment • Resident participation and choice • Community participation and choice • Resident satisfaction • Care plans • Specialized services 	<p>\$0.25 to \$2 added to daily per diem for meeting standards.</p>	<p>Over 50% met all or most of standards.</p> <p>State spent \$20 million on incentives in 1989.</p> <p>Analysis failed to find evidence of influence on overall costs, Medicaid access, occupancy rates or improvement in resident care.</p> <p>Program concludes some measures failed to demonstrate criterion validity.</p>
<p>Massachusetts, implemented in 1979 and ended around 1983 (Willemain, 1983)</p>	<p>N/A</p>	<p>4 measures:</p> <ul style="list-style-type: none"> • Medicaid utilization • Efficiency • Occupancy rate • Survey compliance score of quality 	<p>Incentives paid to homes scoring 80% or higher on survey compliance score.</p>	<p>Most homes received incentive.</p> <p>Analysis found the incentive did not promote quality. Incentive not well understood and goal of improving quality not clear. Assessment of performance considered subjective.</p>

Table 1—Continued
Description of Pay-for-Performance Programs in Nursing Homes

Program Name	Participants	Measures	Incentive	Performance Status
<p>Terminated Programs</p> <p>Nursing Home Incentive Payment Experiment, conducted in 1980 (Weissert et al., 1983; Jones and Meiners, 1986; Norton, 1992)</p> <p><i>Stated Goal: To test whether monetary incentives can improve the access and health of Medicaid residents in NH while also saving Medicaid money</i></p>	36 NH in San Diego	<p>2 measures:</p> <ul style="list-style-type: none"> • Improvement in resident health status based on ADLs • Timely discharge and no readmission for 90 days 	<p>Outcomes bonus equal to estimated costs and wages need to pay for extra nursing help (\$126 to \$370 per case).</p> <p>Discharge bonus equal to offset costs of administering discharge and maintaining vacant bed (\$230 to \$60 per case).</p>	<p>Average NH costs rose by 5% due to incentive payments.</p> <p>Incentive payments associated with higher probability of discharge to home or lower-level NH, and lower probability of hospitalization or death. Cost savings possible from reduced hospital costs.</p> <p>Experimental design in assessment.</p>
<p>Texas Performance-based Add-On (PBAC) Payment Program, implemented in 2001 and ended in 2003(Carter, 2002)</p> <p><i>Stated Goal: Facilities should be recognized and rewarded for their performance</i></p>	Open to all regular NHs in state	<p>3 measures:</p> <ul style="list-style-type: none"> • Regulatory compliance • Resident outcomes • Medicaid utilization 	<p>Incentive payments of \$1.13 in 2001 added to daily per diem.</p>	<p>In FY 2001, 57.8% received incentive payments.</p> <p>The mean payment was \$6,780 (range: \$11 to \$36,859).</p>

NOTE: P4P is pay for performance. NH is nursing home. ADL is activity of daily living.

SOURCE: Becky A. Briesacher, Ph.D., Terry S. Field, D.Sc., Joann Baril, and Jerry H. Gurwitz, M.D., University of Massachusetts Medical School and Meyers Primary Care Institute, Worcester, Massachusetts.

5 percent, due to the incentive payments and increased administrative burdens.

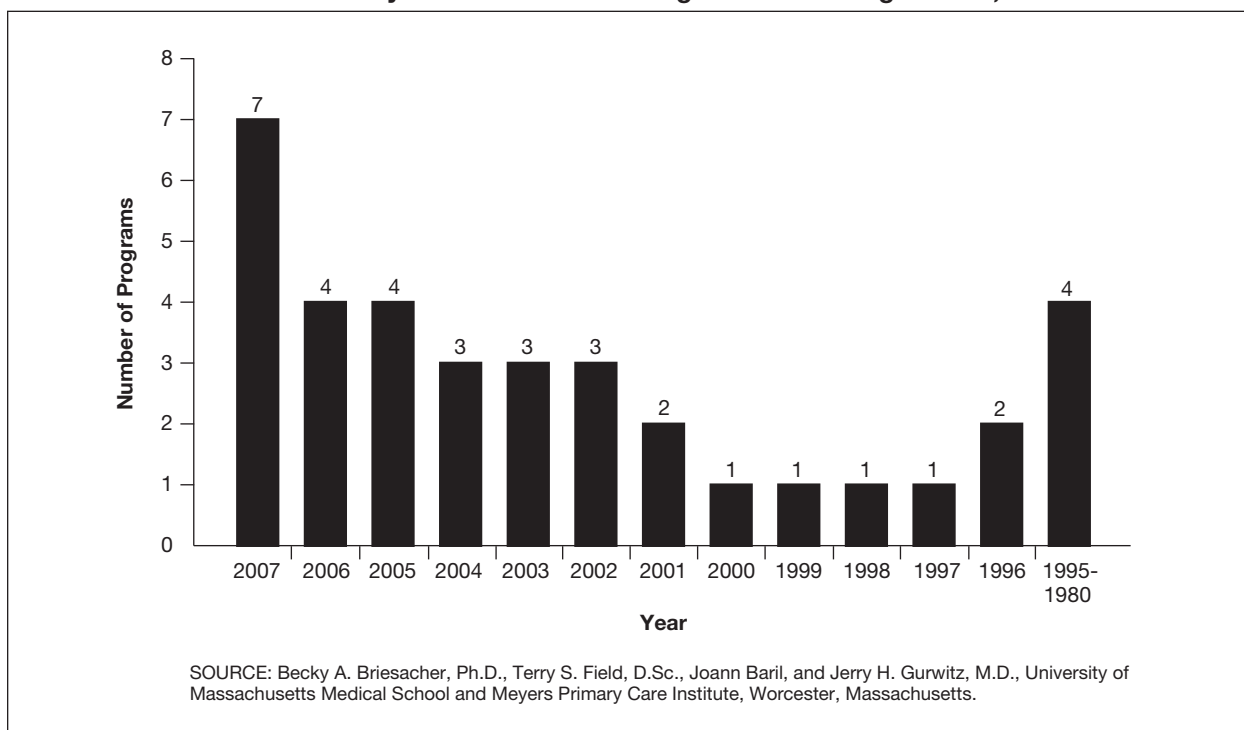
Studies with less rigorous research design found modest or no impact of the pay-for-performance program. In Illinois's Quality Incentive Program, the evaluation failed to find that the incentive payment influenced overall costs, Medicaid access, facility efficiencies, or improved resident care (Geron, 1991). Similarly, the evaluation of Massachusetts' pay-for-performance program also found no relationship between the incentive payment and improvement of quality (Willemain, 1983). However, in Iowa, the nursing homes demonstrated modest improvement in resident satisfaction, staffing and employee retention after implementation of the pay-for-performance program (Kane, Arling, and Mueller, 2007).

MEASURES

Table 1 summarizes the measures of performance that generally fall into eight major domains: staffing (e.g., low staff turnover); performance on certification survey (e.g., deficiency-free inspection); quality indicators from the Minimum Data Set (e.g., no physical restraints or no new pressure ulcers); facility efficiency (e.g., occupancy and operating costs); service to Medicaid enrollees; resident and family satisfaction; resident quality of life (e.g., privacy and comfort); and other outcomes (e.g., timely discharge and improved functioning). No program covers all of these domains, although Oklahoma's Focus on Excellence program and Minnesota's Quality-Add-on program assesses performance on six of the eight areas (Nursing Facility Rates and Policy Division, 2006; Oklahoma Health Care Authority, 2007). (It should be noted

Figure 1

Number of Active Pay-for-Performance Programs in Nursing Homes, 1980-2007

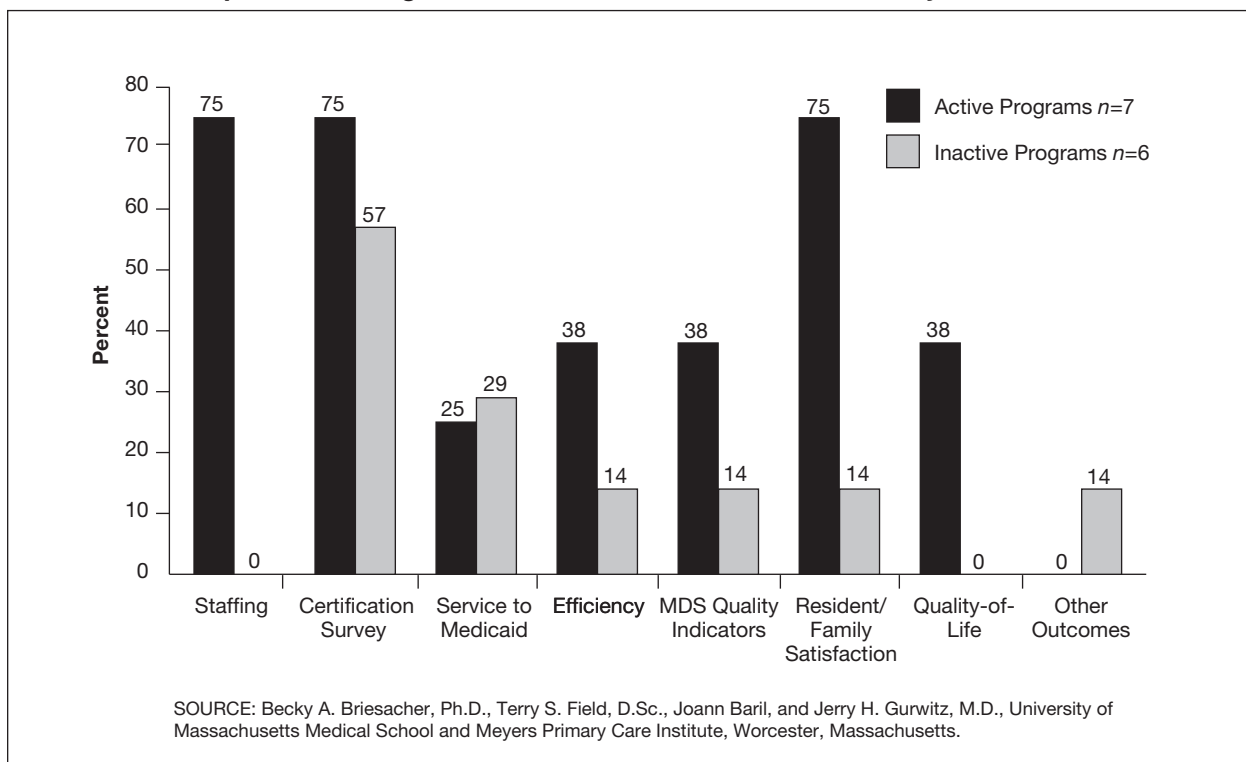


that Minnesota’s program was initially implemented using only a portion of the complete list of quality measures.) More than one-half of these measures came from data already collected in the CMS surveying process, such as total compliance with State and Federal regulations for certified nursing homes. A few of the measures required new data collection, as is the case with the resident quality of life assessment in Minnesota’s program, which costs the State about \$700,000 each year. Also, Oklahoma’s program uses its own measures of resident outcomes that are not derived from the Minimum Data Set. Figure 2 shows that the active programs most often define performance in terms of staffing, the certification survey, and resident satisfaction. In comparison, the older inactive programs showed more heterogeneity with few programs assessing performance using the same measures.

INCENTIVES

The incentive payments in the pay-for-performance programs varied modestly, ranging from a low of a \$0.25 flat bonus per patient day to a high of a 5 percent increase in the daily per diem rate (Table 1). The rationale for the level of the incentive payment (whether there was any relationship to the costs of improving care) was poorly documented, and the proportion of providers receiving the incentive payment varied considerably. The proportion of eligible homes earning the incentive payment in any year ranged from 38 to 87 percent, and total expenditures generally varied according to the number of eligible homes. For example, at the end of the first year of Texas’ Performance-based Add-On Payment program, 57.8 percent of 1,020 nursing homes in the State had earned the incentive payment, for a total cost of

Figure 2
Proportion of Programs with Performance Measures in Major Domains



\$4 million (Carter, 2002). Otherwise, the annual expenditures for the programs ranged from \$500,000 (Utah's Nursing Home Quality Improvement Initiative) to \$20 million (Illinois Quality Incentive Program). The source of the incentive payments was also poorly documented, such as whether they represented a new allocation of funds or a reallocation of other nursing home funds.

DISCUSSION

In our review, we found that few pay-for-performance programs have occurred in the nursing home setting since 1990, and even fewer have lasted more than a few years. Among the seven programs that are currently operational, three were initiated in 2007 and the oldest program is in its sixth year of operation.

We found little empirical evidence that pay-for-performance programs increase the quality of care of residents or the efficiency of that care in nursing homes. However, the program set in San Diego did find benefits, and it used the strongest of all evaluation designs, a randomized control design. This provocative finding deserves a more current replication. The disappointing results from the other programs are difficult to explain but may be related to barriers specific to this setting of care. According to our conceptual framework, the incentive payment must be sufficient to reward providers after accounting for the costs to improve care. For nursing homes already strained by high turnover among staff and administrators or ownership profits, the costs of improving care, such as implementing health information technology may far exceed the incentive payment.

Our review also revealed that nearly all of the programs were developed independently so there was modest agreement

across the design elements of the programs and no clear state-of-the art trends. In most cases the performance measures are derived from existing data collection efforts related to State and Federal certification surveys. In addition to problems with accuracy and timeliness, these sources limit measurement options to a few components of quality with clear relationships to resident outcomes. Important quality issues such as the quality of life of residents and the satisfaction of residents and their families with nursing home care require additional data collection, increasing the cost of these programs.

Several limitations of this review should be noted. Pay-for-performance is an evolving concept, so standard terminology was sometimes lacking and descriptions of current activity were limited. For instance, the terms value-based purchasing and pay-for-performance were treated as synonymous, while quality recognition programs were handled on a case-by-case basis. Documentation of these programs was very limited. For instance, in the case of Utah, we could identify that a program had been initiated in 2004 but could find no subsequent information on the performance. In fact, this review raised more questions than answers. We could identify that many programs were short-lived but could rarely find the reasons for the terminations. Lastly, any assessment of current pay-for-performance activity will quickly become outdated. Our assessment can serve only as snapshot of the historical trends and evidence base for these programs before CMS invites participation in its nursing home demonstration.

Using financial incentives to encourage quality of healthcare is an increasingly popular approach to improving quality. That most of these programs in nursing homes have been terminated after a few years of operation sends an important

warning that these approaches must be very carefully designed, although the reasons for these terminations are not clear and may be related more to lack of political viability rather than practical viability. At least one program had to be significantly scaled back in response to pressure from the State's nursing home industry, an important constituency of State lawmakers (Kane, Arling, and Mueller, 2007). With the current lack of evidence to support the design and implementation of such programs, payers considering pay-for-performance in this setting should carefully consider the specific areas of performance and quality of most concern, review the capacity of the target nursing homes to actually accomplish the quality goals, involve the local nursing home industry in the design of the program from the beginning, and track all of the potential intended and unintended consequences of the program.

What can policymakers learn from this review, especially in terms of assessing the CMS Nursing Home Value-Based Purchasing Demonstration (NHVBP)? First, rigorous evaluations of the impact of pay-for-performance are almost nonexistent in the nursing home setting, yet they are critical for understanding the implications of this policy. It is reassuring to see that the NHVBP will employ an experimental design with randomized assignment of participating nursing homes into treatment and control groups and has contracted for an independent evaluation. Second, improvement in residents' outcomes and costs savings have been documented in only one program (in San Diego in the 1980s). Yet, the NHVBP demonstration requires cost savings expected to result from decreases in hospitalizations and skilled nursing facility stays and other savings, otherwise incentive payments are not awarded. The design of this payment system places a considerable burden on the

provider to increase quality that ensures Medicare savings, and this is a burden unlike that of the other programs in our review. Third, the state of measuring quality in nursing homes has evolved to include informative domains such as resident quality of life and consumer satisfaction. The CMS demonstration is initially focused on the traditional measures of staffing (levels and stability), MDS based-quality measures, survey deficiencies, and inappropriate hospitalizations. The one exception in this list is the measure of inappropriate hospitalizations, although the validity and reliability of this measure in the nursing home setting is yet unclear. It should be noted, though, that resident satisfaction has been listed as a potential measure for future years of the demonstration (Centers for Medicare & Medicaid 2008). Lastly, the small number of prior programs, many of which were terminated, suggests that potentially serious barriers exist to implementing and sustaining pay-for-performance programs in this setting. It would be beneficial if the CMS demonstration would include a thoughtful assessment of these barriers, particularly which factors would be important to maintaining a pay-for-performance program after the demonstration is concluded.

ACKNOWLEDGMENTS

The authors would like to thank Darlene O'Connor, Ph.D., Associate Professor of Family Medicine and Community Health and Director of Long-Term Care Policy, University of Massachusetts Medical School for her assistance.

REFERENCES

Agency for Health Care Administration: *Title XIX Long-Term Care Reimbursement Plan, Version XXX, Effective Date: July 1, 2006*. 2006. Internet address: http://www.fdhc.state.fl.us/medicaid/cost_reim/pdf/long_term_care_v33.pdf (Accessed 2009.)

- Carter, B. J.: *Characteristics Associated with Performance in Texas Medicaid Nursing Facilities: Findings from the FY2001 Performance-based Add-On (PBAO) Payment Program*. 2002. Internet address: http://qmweb.dads.state.tx.us/Reports/PBAO_2002.pdf (Accessed 2009.)
- Centers for Medicare & Medicaid: *Nursing Home Value-Based Purchasing Demonstration*. 2008. Internet address: http://www.cms.hhs.gov/Demo-ProjectsEvalRpts/downloads/NHP4P_Summary.pdf (Accessed 2009.)
- Centers for Medicare & Medicaid Services: *2007 Action Plan for (Further Improvement of) Nursing Home Quality*. 2006. Internet address: <http://www.cms.hhs.gov/SurveyCertificationGenInfo/downloads/2007ActionPlan.pdf> (Accessed 2009.)
- Committee on Quality of Health Care in America and Institute of Medicine: *Crossing the Quality Chasm: A New Health System for the 21st Century*. National Academy Press. Washington, DC. 2001.
- Doshi, J. A., Shaffer, T., and Briesacher, B.: National Estimates of Medication Use in Nursing Homes: Findings from the 1997 Medicare Current Beneficiary Survey and the 1996 Medical Expenditure Survey. *Journal of the American Geriatric Society* 53(3): 438-443, March 2005.
- Felt-Lisk, S., Gimm, G., and Peterson, S.: Making Pay-For-Performance Work In Medicaid. Web Exclusive. *Health Affairs* w516-w527, June 26, 2007. Internet address: <http://www.healthaffairs.org> (Accessed 2009.)
- Georgia Department of Community Health: *Department of Community Health/Georgia Nursing Home Incentive Model*. 2007a. Internet address: <http://www.ghca.info/DCH.pdf> (Accessed 2009.)
- Georgia Department of Community Health: *Georgia Medicaid Takes Next Step In Nursing Home Quality Initiative*. 2007b. Internet address: http://dch.georgia.gov/vgn/images/portal/cit_1210/52/28/80446139Press_Release-Nursing_Home_Quality_Initiative.pdf (Accessed 2009.)
- Georgia Department of Community Health: *A Snapshot of Georgia Medicaid: Nursing Home Quality Initiative*. 2007c. Internet address: http://dch.georgia.gov/vgn/images/portal/cit_1210/60/52/70650176Medicaid-Fact_FYfin08Sheet.pdf (Accessed 2009.)
- Geron, S. M.: Regulating the Behavior of Nursing Homes Through Positive Incentives: An Analysis of Illinois' Quality Incentive Program (QUIP). *The Gerontologist* 31(3): 292-301, June 1991.
- Gilmore, A. S., Zhao, Y., Kang, N., et al.: Patient Outcomes and Evidence-Based Medicine in a Preferred Provider Organization Setting: A Six-Year Evaluation of a Physician Pay-for-Performance Program. *Health Services Research* 42(6 Pt 1): 2140-2159, December 2007.
- Glickman, S., Ou, F.-S., Delong, E.R., et al.: Pay for Performance, Quality of Care, and Outcomes in Acute Myocardial Infarction. *JAMA* 297(21): 2373-2380, 2007.
- Held, R.: *Rural Health Advisory Committee, Nursing Facility Pay for Performance*. 2007. Internet address: <http://www.health.state.mn.us/divs/orhpc/rhac/minutes/2007/032007.html> (Accessed 2009.)
- Intrator, O., Grabowski, D.C., and Zinn, J.: Hospitalization of Nursing Home Residents: The Effects of States' Medicaid Payment and Bed-Hold Policies. *Health Services Research* 42(4): 1651-1671, 2007.
- Jones, B. J. and Meiners, M.R.: *Nursing Home Discharges: The Results of an Incentive Reimbursement Experiment*. U.S. Department of Health and Human Services, National Center for Health Services Research and Health Care Technology Assessment. DHSS Publication No. (PHS)86-3399. Washington, DC. 1986.
- Kane, R., Arling, G. A., and Mueller, C.: A Quality-Based Payment Strategy for Nursing Home Care in Minnesota. *The Gerontologist* 47(1): 108-115, February 2007.
- Kansas Department on Aging: *A Kansas Case Study: Culture Change and the Nursing Facility Quality and Efficiency Outcomes Incentive Factor*. 2007. Internet address: <http://www.agingkansas.org/CultureChange/PEAK/peakStudy.htm> (Accessed 2009.)
- Kuhmerker, K. and Hartman, T.: *Pay-for-Performance in State Medicaid Programs: A Survey of State Medicaid Directors and Programs*. 2007. Internet address: http://commonwealthfund.org/publications/publications_show.htm?doc_id=472891 (Accessed 2009.)
- Minnesota Department of Human Services: *Nursing Facility Rates and Policy Division, Provider Information, Nursing Facility Performance-Based Incentive Payments*. 2006. Internet address: http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=dhs16_136314 (Accessed 2009.)
- Norton, E. C.: Incentive Regulation of Nursing Homes. *Journal of Health Economics* 11(2): 105-128, 1992.
- Nursing Facility Rates and Policy Division: *Value-Based Reimbursement: A Proposal for a New Nursing Facility Reimbursement System*. 2004. Internet address: http://www.dhs.state.mn.us/main/groups/aging/documents/pub/dhs_id_020477.pdf (Accessed 2009.)

Nursing Facility Rates and Policy Division: *New Rate Setting System for Nursing Facilities: Recommendations to the Minnesota Legislature*. 2006. Internet address: http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_FILE&RevisionSelectonMethod=LatestReleased&Rendition=Primary&allowInterrupt=1&noSaveAs=1&dDocName=dhs_id_057157 (Accessed 2009.)

Office of Policy and Research: 1999 Sunset Review: *Quality of Care Incentive Payment Program Advisory Committee*. 1999. Internet address: <http://www.dora.state.co.us/opr/archive/99advisorycommitteereport.pdf> (Accessed 2009.)

Ohio Department of Job and Family Services: *Application to Participate in the Center For Health Care Strategies, Inc. Pay-For-Performance Purchasing Institute Initiative*. 2006. Internet address: http://jfs.ohio.gov/ohp/bcps/OhMedAdvComm/2006/MCAC_WEB_Ohio_P4P_Proposal081406.pdf (Accessed 2009.)

Oklahoma Health Care Authority: *Focus on Excellence' to Base Nursing Home Pay on Performance*. News Release. 2007. Internet address: <http://www.ohca.state.ok.us/about.aspx?id=2947> (Accessed 2009.)

Petersen, L., Woodard, L.D., Urech, T., et al.: Does Pay-For-Performance Improve the Quality of Health Care? *Annals of Internal Medicine* 145(4): 265-272, 2006.

Rosenthal, M. B. and Camillus, J.: *How Four Purchasers Designed and Implemented Quality-Based Purchasing Activities - Lessons From the Field*. 2007. Internet address: <http://www.ahrq.gov/qual/qbp-lessons.htm> (Accessed 2009.)

Rosenthal, M. B. and Frank, R.G.: What is the Empirical Basis for Paying for Quality in Health Care? *Medical Care Research and Review* 63(2):135-154, 2005.

Rosenthal, M. B. and Frank, R.G.: What is the Empirical Basis for Paying for Quality in Health Care? *Medical Care Research and Review* 63(2): 135-157, 2006.

Rosenthal, M. B., Frank, R.G., Zhong, L., et al.: Early Experience with Pay-for-Performance: From Concept to Practice. *JAMA* 294(14):1788-1793, 2005.

Trisolini, M., Pope, G., Kautter, J., et al.: *Medicare Physician Group Practices: Innovations in Quality and Efficiency*. December 2006. Internet address: http://www.commonwealthfund.org/usr_doc/971_Trisolini_Medicare_physician_group_practices_i.pdf (Accessed 2009.)

U. S. Government Accountability Office: *Nursing Home Reform: Continued Attention Is Needed to Improve Quality of Care in Small but Significant Share of Homes*. Testimony Before the Special Committee on Aging, U.S. Senate. Washington, DC. 2007.

Weissert, W. G., Scanlon, W.J., Wan, T., et al.: Care for the Chronically Ill: Nursing Home Incentive Payment Experience. *Health Care Financing Review* 5(2): 41-49, 1983.

White, A., Hurd, D. Moore, T., et al.: *Quality Monitoring for Medicare Global Payment Demonstrations: Nursing Home Quality-Based Purchasing Demonstration*. Abt Associates Inc. Cambridge, MA. 2006.

Willemain, T. R.: Survey-Based Indices for Nursing Home Quality Incentive Reimbursement. *Health Care Financing Review* 4(3): 83-90, 1983.

Reprint Requests: Becky A. Briesacher, Ph.D., University of Massachusetts Medical School, Division of Geriatric Medicine, Biotech Four, Suite 315, 377 Plantation Street, Worcester, MA 01605. E-Mail: becky.briesacher@umassmed.edu

