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Improving Health Care Quality Drives Payment Reform

Pharmacists are key to reaching quality goals, reducing readmissions

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Better quality health care at a lower cost is a health care reform priority. Health care providers have long worked toward improving patient care by developing and implementing best practices, increasing collaboration among health care professionals, and improving medication management to avoid and shorten hospital stays. The Patient Protection and Affordable Care Act of 2010, hereafter referred to as the Affordable Care Act (ACA), encourages health care quality improvements by financially penalizing hospitals that do not reach performance standards and rewarding those that meet or exceed them.

This paper examines four ACA provisions that link payment for health care services with the quality of care patients receive: health care-acquired conditions, value-based purchasing (VBP), hospital readmissions, and payment bundling.¹ It is hoped that patients' health outcomes will improve while health care costs will decline by reducing health care-acquired conditions and readmissions, tying a portion of hospitals' payments to performance measure scores, and paying for an episode of care that could include an inpatient stay and post-acute care. Although health care quality in the United States is improving, there is work to be done in raising the results for key health performance measures.

While improving health care is the primary concern, it also is essential that these initiatives help rein in escalating health care spending. Total health care spending in the United States increased 23% over a five-year period from \$2.021 trillion in 2005 to \$2.486 trillion in 2009, with hospital spending accounting for one-third of that total health care spending growth.² "Hospital services include inpatient and hospital-based outpatient, home health, nursing home and hospice care, as well as the cost of inpatient pharmacy and resident physicians."²

Examples of how pharmacists are contributing to the improvement of performance measure scores that will be tracked under health care reform are highlighted in the Appendix at the end of this paper. The highlighted

programs show how hospitals are targeting chronic conditions — such as heart failure, hypertension, and infections — by incorporating pharmacists into health care teams to make medication recommendations to physicians and improve patients' medication management. However, hospitals face challenges ahead, particularly in funding efforts to analyze the effectiveness of these programs.

Pharmacists Improve Patient Results

Pharmacists have an important role to play in helping hospitals and health systems achieve the performance goals established by the ACA and its related regulations. Hospitals and health systems will need to better manage chronically ill patients' medications in order to reach health care reform performance standards. Pharmacists have shown they can improve patient outcomes by providing medication therapy management (MTM) services. Patients whose medications were managed by a pharmacist experienced significant improvements in chronic diseases, better safety outcomes, increased patient knowledge, and improved quality of life.³

Pharmacists also will prove essential in preventing unnecessary hospital readmissions. For example, in one study, a clinical pharmacist performing MTM for patients 80 years old and older on hospital wards reduced readmissions and lowered costs.⁴

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Further, 20 studies found that pharmacists improved economic and clinical outcomes through direct patient care. These studies showed that a pharmacist's care reduced and avoided costs by "reducing drug expenditures, hospital admissions, lengths of hospital stay, and emergency department visits."⁵

Health Care Quality Is Improving

Nationally, health care quality is improving by a median rate of 2.3% annually across 179 measures, as tracked by the AHRQ.⁶ However, hospitals have room for improvement. An analysis of 2,583 hospitals based on inpatients discharged in 2006 and 2007 showed that "41.8% of hospitals achieved top performance in either patient experiences or clinical quality or both, but the majority of hospitals (58.2%) were not in the top quartile for either summary measure."⁷ An analysis of 3,087 hospitals' performance on 18 quality-of-care indicators for acute myocardial infarction, heart failure, and pneumonia showed significant improvement on 15 measures with improvement ranging from 3% to 33% from 2002 through 2004.⁸ Hospital performance improved over time, with the lower performers improving faster than the higher performers.⁸

Federal Laws Building to ACA

ACA provisions linking hospital performance to Medicare reimbursement for services have their roots in several earlier federal laws. Three laws set the stage for Value-Based Purchasing (VBP), beginning with the Medicare Modernization Act of 2003 under which Congress commissioned the Institute of Medicine to draft a report describing how to align Medicare performance with payment.¹¹ The Deficit Reduc-

tion Act of 2005 required the Department of Health and Human Services (HHS) to develop a plan to implement a Medicare VBP program.¹¹ The Medicare Improvements for Patients and Providers Act of 2008 then required an HHS VBP transition plan for Medicare providers.¹¹

Establishing a quality reporting system for eligible professionals was required under the Tax Relief and Healthcare Act of 2006.¹² This system allowed for the creation of incentive payments that led to the Physician Quality Reporting Initiative, a VBP program for physician services,¹² now called the Physician Quality Reporting System.

HIT's Important Role

Health information technology (HIT) will play an important role in helping hospitals and health systems meet ACA performance measure reporting requirements by monitoring hospitals' and health systems' performance on key patient health indicators such as pneumonia and chronic heart failure. Individual patient performance across indicators must be collected, evaluated, and combined with other patient data to report hospital and health-system trends. The Health Information Technology for Economic and Clinical Health (HITECH) provisions of the American Recovery and Reinvestment Act of 2009 helped lay the groundwork for many of health care reform's mandates by appropriating funds to establish a national HIT infrastructure.¹³ The Act supports a number of initiatives that bolster health care reform quality goals by tracking and using patient information such as the development of a nationwide electronic exchange, the secure and accurate use of health information, and the development and adoption of certified electronic health records.¹³

Challenges for Rural Hospitals Presents Opportunities for Pharmacists

Implementing the ACA's health care quality provisions may be especially challenging for rural hospitals that have limited staff and financial resources and that treat patients who are more likely to be older and have a chronic illness.⁹ In particular, critical access hospitals (CAHs) may have difficulty reaching performance standards as one study shows that CAHs scored consistently lower on performance measures than non-CAHs.¹⁰ CAH Medicare fee-for-service patients with acute myocardial infarction, congestive heart failure, or pneumonia who were discharged in 2008 and 2009 scored lower on Hospital Quality Alliance measures than non-CAH patients.¹⁰ The study's authors speculate that CAHs' lower performance may be due to having fewer quality improvement resources.¹⁰ CAHs also have fewer clinical and technological resources and have higher mortality rates than non-CAHs.¹⁰ With fewer resources, it is important for a CAH to maximize the staff it has. This presents an opportunity for CAH pharmacists to show how they can improve hospital performance measure results by providing MTM services to patients.

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Linking Health Care Quality and Payment

Health Care-Acquired Conditions

Medicaid will stop paying for health care-acquired conditions under the ACA, making a prohibition already in practice in 29 states a national requirement.¹⁴ Although the ACA prohibits Medicaid payments for medical care for health care-acquired conditions in all states beginning July 1, 2011,¹⁵ CMS advises that compliance action will be delayed until July 1, 2012.¹⁴ What this means for hospitals in the 21 states that do not have state-established Medicaid hospital-acquired condition nonpayment policies is that those hospitals will have until July 1, 2012, before Medicaid stops paying to treat those conditions.¹⁴

When the rule takes effect, Medicaid will no longer pay for provider-preventable conditions in hospital inpatient settings, which includes all Medicare hospital-acquired conditions, except for deep vein thrombosis/pulmonary embolism related to total knee replacement and total hip replacement for pediatric and obstetric populations, and the national coverage determinations (NCDs).¹⁴ Under the NCDs, CMS does not pay for a surgical or invasive procedure to treat a medical condition when the practitioner performs a different procedure by mistake, a correct procedure on the wrong body part, or a correct procedure on the wrong patient.¹⁴

Medicaid also will not pay for other provider-preventable conditions in the inpatient and outpatient settings.¹⁴ At a minimum, these conditions will include Medicare's three NCDs.¹⁴ CMS would allow states to expand nonpayment of other provider preventable conditions to other practice sites and to expand the types of conditions that would not be reimbursed with CMS approval.¹⁴

Value-Based Purchasing

An estimated 3,092 hospitals nationwide are expected to participate in the Medicare VBP program in fiscal year 2013 that is designed to improve health care services by making incentive payments to hospitals that reach performance measures.¹⁶ Hospitals must have at least 10 cases associated with a process-of-care measure to have that measure's performance analyzed.¹⁶ If a hospital has four measures excluded from analysis because there are not enough cases

associated with those measures to be analyzed then the hospital will not be eligible to participate in the program.¹⁶

Payment

When VBP takes effect, CMS will reduce each hospital's DRG payment by 1% in fiscal year 2013 (an estimated \$850 million in fiscal year 2013¹⁶) and will cut the DRG payment by an additional 0.25% each fiscal year until the total reduction is 2% in fiscal year 2017 and following years.¹⁷ Incentive payments will be made from this funding pool, with hospitals that post the highest VBP scores receiving the largest incentive payments.¹⁷ Special rules will apply for sole community hospitals and Medicare-dependent, small rural hospitals.¹⁷

The VBP payment structure will establish clear winners and losers, according to CMS. "[A]mong the 3,092 hospitals that would be participating in the Hospital VBP program, we estimate that percent increases in payments resulting from this proposed rule will range from 0.0236 percent for the lowest-scoring hospital to 1.817 the highest-scoring hospital."¹⁸

A report by the Deloitte Center for Health Solutions noted that "[s]takeholders need to prepare now to determine how they will rank relative to their peers and implement action plans to mitigate future shortcomings for margin preservation in this zero-sum game."¹¹

Performance Measures

How much of an incentive payment hospitals and health systems will receive will depend on their performance on an increasing number and type of measures, beginning in fiscal year 2013 with clinical process-of-care measures.^{17,19} Outcomes and efficiency measures will be added in fiscal year 2014.¹⁷ Outcomes measures will be risk-adjusted for hospitals treating seriously ill patients.²⁰ CMS is suspending the inclusion of hospital-acquired condition, AHRQ, and Medicare spending per beneficiary measures.²¹ These measures were originally expected to be included in the fiscal year 2014 program.¹⁷

Demonstration Programs

For those hospitals ineligible for VBP because they do not have a large enough sample of measures analyzed or a large enough number of patients with a particular condition, CMS will create two VBP demonstration programs: one for inpatient critical access hospitals and another for hospitals excluded from the VBP program because they do not have at

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least 10 cases per measure for four or more measures.¹⁷ Each will be a three-year program that will test innovative methods of measuring and rewarding quality and efficient health care and must be established within two years of ACA's enactment.¹⁷

Hospital Readmissions

Reducing hospital readmission rates is another key aspect of the ACA. A five-year comparison of 30-day readmission rates in United States hospitals shows that there was a slight increase in readmission rates following a medical discharge, from 15.9% in 2004 to 16.1% in 2009.²² Readmission rates following a surgical discharge were the same in 2004 as in 2009, 12.7%.²² Readmission rates were higher in regions of the country where patients were more likely to get their health care from a hospital.²² Unplanned rehospitalizations cost Medicare an estimated \$17.4 billion in 2004.²³

To give hospitals a financial incentive to prevent readmissions, hospital payments for selected conditions are being reduced for excess Medicare patient readmissions. The initial three conditions are acute myocardial infarction, heart failure, and pneumonia;²⁴ all endorsed as 30-day readmission rate measures by the National Quality Forum.²⁵ Readmissions that are not related to a prior discharge will not be counted against a hospital.²⁵ Beginning in fiscal 2015, readmission rates for four other conditions (chronic obstructive pulmonary disease, coronary artery bypass graft, percutaneous transluminal coronary angioplasty, and other vascular conditions²⁶) will be evaluated as well.²⁵

Hospital readmission rates will be calculated by hospital and condition and will be posted on the CMS Hospital Compare website.²⁵ Hospital readmission reduction program requirements will be implemented in the fiscal years 2012 and 2013 and through future Inpatient Prospective Payment Systems and Long-Term Care Hospital Prospective Payment System regulations.²⁷

As hospitals and health systems consider how to prevent unnecessary readmissions, multiple factors that contribute to readmissions should be considered. These factors include the patient's general health and frailty,²⁸ the quality of inpatient care,²⁹ disease severity,³⁰ the patient's education level and satisfaction with emergency care,²⁷ the patient's race,³¹ and the patient's satisfaction with the care received and with discharge planning.³²

Significantly reducing readmissions may be difficult for hospitals as a study found that only 16% of urgent readmissions within six months of discharge were potentially avoidable.³³

Medicare Payment Bundling Pilot Program

Another way to improve health care service coordination, quality, and efficiency is the establishment of a five-year Medicare Payment Bundling Program beginning January 1, 2013.³⁴ Payment bundling can follow one of four models identified by CMS.³⁵

Three models will be retrospective, paying providers a target amount for services.³⁵ Providers would receive discounted fee-for-service payments and total payments would be compared to the target price at the end of an episode of care.³⁵ Providers would share in any savings generated.³⁵ Under Model 1, the episode of care would be an inpatient stay, with physicians paid separately.³⁵ Under Model 2, the episode of care would be the inpatient stay and post-acute care, ending either 30 or 90 days after discharge.³⁵ Under Model 3, the episode of care would start after the patient is discharged and end after a minimum of 30 days.³⁵

Under the one prospective model, Model 4, one bundled payment would be made to a hospital for all inpatient services, including services provided by physicians and other health-care providers.³⁵

Pilot programs will be evaluated based on their performance on quality measures that will be determined.³³ Those quality measures will address functional status improvement, reducing the rates of avoidable hospital readmissions, patient discharge rates to the community, patient emergency room admission rates after a hospitalization, health-care acquired infections, efficiency measures, patient-centeredness of care, and patient perception of care.³³ Programs that show improved patient quality and reduced costs may be extended past five years.³³

Private Payers' Payment Bundling Experience

Private health insurers have bundled payments for decades for certain patient services. The five largest private health payers—Aetna, Cigna, Humana, UnitedHealth Group, and Wellpoint—have bundled payments for organ and bone marrow donations for 20 years.³⁶ However, these private payers had to process bundled payments manually because their claims systems could not group hospital and physician payments.³⁶ More recently, other payers have begun bundling

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payments for other procedures such as bariatric and cardiac bypass surgeries.³⁶

Private payers have identified three obstacles to Medicare bundled payments.³⁶ The first is that manual claims processing is not viable for higher-volume services.³⁶ Second, there is not a standard definition of an episode of care.³⁶ Third, limiting provider choice could create problems for Medicare fee-for-service patients.³⁶

Conclusion

Health care professionals are continuously striving to improve the care patients receive and patients' overall health. Health care reform quality-of-care initiatives are not striking new ground but are creating financial stakes for hospitals to meet quality goals targeted to their institution. As a result, hospital and health-system executives may take even closer notice of hospitals' health care quality efforts. This creates an excellent opportunity for pharmacists to emphasize not only how much they have helped improve the quality of patient care all along but also how much more they could do if they were included in institution-wide efforts. Pharmacists are engaged in reducing readmissions for heart failure patients, im-

proving antimicrobial stewardship, and providing MTM for patients with chronic diseases. This is just a sampling of what pharmacists can do to improve patient care and help hospitals and health systems meet ACA goals and prevent a potential loss of revenue. Pharmacists should work with other health care providers and hospital executives to incorporate pharmacists' medication expertise into quality-of-care efforts.

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Appendix

Health-system pharmacists can help hospitals reach health care reform performance goals, as shown in the following examples. The programs in this Appendix take a variety of approaches such as improving patients' chronic conditions, reducing hospital readmissions, improving the quality of care patients receive, and dismantling roadblocks to collaborative patient care. A challenge for several of these programs is securing funding to study the interventions' effectiveness.

CHARMS Interdisciplinary Team Targets Heart Failure Admissions

The Congestive Heart Failure Admission Reduction Model Service (CHARMS) treats patients who are admitted to Rush University Medical Center's cardiac care and cardiac step-down units.³⁷ CHARMS patients at the 676-bed academic medical center have had more than three heart failure admissions in one year, were readmitted within a month after discharge, had two emergency department visits before admission, and had a heart failure admission at another hospital in less than one month.³⁷

Patients are treated by an interdisciplinary team that includes: an attending physician, a fellow who is a physician training to specialize in cardiology, a pharmacist, and a social worker.³⁷ The fellow examines patients daily, is present on rounds, and makes preliminary recommendations.³⁷ The pharmacist rounds with the team, making evidence-based recommendations.³⁷ The attending physician is present on rounds, makes final recommendations for patients based on team input, oversees care coordination, sees CHARMS patients in clinics, and participates in family meetings to discuss the patient's prognosis and care.³⁷

A 30-day supply of medication is delivered from Rush's outpatient pharmacy to the patient's home, with patient approval.³⁷ The social worker helps patients overcome medication compliance barriers and follows-up with patients to ensure they are taking the medication.³⁷

The CHARMS team developed an order set, including heart failure core measures, to use with this patient population.³⁷ The program has not been able to document its results as yet because it does not have a person dedicated to compiling and analyzing program data.³⁷

Lack of funding to hire staff is the main challenge the program faces.³⁷ Further expansion of the program would re-

quire additional pharmacists, pharmacy residents, and heart failure nurses.³⁷ The hiring of a statistician to study the program's results also would be necessary.³⁷ The medical center is seeking grants to hire the additional staff.³⁷

As staff are added to expand CHARMS, the program would provide pharmacists during patient rounds for heart failure patients, educate patients in-depth on their medications, and coordinate heart failure patient discharge medications.³⁷ Rush also plans to add an emergency department pharmacist and a heart failure nurse who would see all patients, of which a significant number are patients suffering heart failure.³⁷

Medical Center Team Targets Staph Infections; Staff-Developed Computer Application Educates Patients

All hospitalized adult patients at Ohio State University Medical Center in Columbus, Ohio who test positive for staphylococcus aureus bacteremia are tested for methicillin-resistant staphylococcus aureus (MRSA) and receive services through the center's antimicrobial stewardship program.³⁸

Core program members at the medical center that has more than 900 beds include an infectious diseases physician serving as program director, three infectious diseases pharmacists, and a research data manager.³⁹ Support is provided by microbiologists, epidemiologists, and infection control preventionists.³⁹ Pharmacists on the team interpret the patient's MRSA blood culture test results, communicate the results to the physician, and recommend antimicrobial therapy and an infectious disease consult for the patient.³⁹

Program members use a software application developed by medical center staff that is tailored to the practice setting called STAB-IT (Staph Aureus Bacteremia Is Terrible).³⁹ The application tests staff members and residents on the best treatment practices for staphylococcus aureus bacteremia infections.³⁹ Used on iPhones and iPads, a pharmacist can show patients where the infection is in their body, which helps patients to better understand how they will be treated.³⁹

A study of the program showed that patients' antibiotic therapy was switched more quickly, reducing the average length of stay by 6.2 days.³⁸ This resulted in a \$21,387 reduction in average hospital costs per patient.³⁸

One challenge with the program is encouraging STAB-IT's use among established pharmacists and physicians who are

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not familiar with applications.³⁹ By seeing STAB-IT's usefulness in educating patients as well as staff and residents, pharmacists and physicians are overcoming their reluctance to using the unfamiliar technology.³⁹ The medical center plans to make the STAB-IT application available on the Apple App Store.³⁹

Personalizing Patient Care Leads to Patients Meeting Outcomes Goals

Creighton University employees with hypertension, dyslipidemia, or both will be eligible for the Cardiovascular Risk Reduction Program (CVRRP) designed to encourage healthier patient lifestyles and improve care coordination and provider communication.⁴⁰

CVRRP was tested in a pilot program at the Omaha, Nebraska university that designed programs personalized to address patients' "physical activity, nutrition, alcohol consumption, weight control, stress management, sleep success, and tobacco cessation (if needed)."⁴¹ Patients received medication therapy management for all their medications, including a cost effectiveness evaluation.⁴¹ Each patient saw a pharmacist 11 times in a year.⁴¹ Eleven out of 15 patients in the pilot program achieved all six outcome goals for systolic blood pressure, diastolic blood pressure, LDL cholesterol, fasting blood glucose, exercise, and refraining from tobacco products.⁴¹

When the program is fully implemented, pharmacists would be reimbursed at a higher rate only for patients who achieve all of their outcomes goals under a pay-for-performance model.⁴¹ However, the details of such a model have not been determined.⁴⁰ Participating pharmacist reimbursement was not affected in the pilot program.⁴⁰

Two challenges faced during the pilot program were ensuring patients adhered to their plans to reach their outcome goals and coordinating patients' care with other health care providers.⁴¹

To expand this model, program developers are creating a training program for pharmacists to teach them how to help patients manage their chronic conditions.⁴¹ There are also hopes to implement the model and show a positive return on investment and replicate the model in a variety of settings, such as in a health system, in a community pharmacy, and in nontraditional settings like corporations.⁴¹

Quality Measure Results Improved Through Pharmacist Collaboration with Physicians, Nurses

McPherson Hospital, a 50-bed hospital in McPherson, Kansas, has built a value-based purchasing program that has resulted in the hospital making constant, small quality improvements.⁴²

The hospital started by collecting performance data on measures such as chronic heart failure, myocardial infarction, and pneumonia for years before tying that data to payments.⁴² When the program began, performance data was only shared with risk managers and quality improvement staff.⁴² Then aggregate data was shared with physicians.⁴² When simply sharing the data did not improve performance measures, a pharmacist was brought in who began attending quality improvement and executive medical staff meetings to educate providers on the importance of meeting quality measure standards.⁴²

One method the hospital used to improve quality measure performance was to require physicians to use standard order forms.⁴² Physicians initially resisted using the forms, saying they were too long or complicated.⁴² However, the physicians were eventually convinced to use them and the pharmacist tailored the forms to the service provided.⁴² For example, the hospital implemented a pharmacy/nursing standard order form for vaccines and a standard chronic heart failure discharge form.⁴²

Other quality improvement changes were happening as well. Patients began receiving medication counseling at discharge and duties were assigned to certain staff to ensure antibiotics were administered in a timely manner after surgery.⁴²

When a patient does not meet a medication-related measure, a pharmacist performs a root cause analysis to find out why.⁴² This resulted in discussions with surgeons about anticoagulation measures from which a surgeon created pre-printed templates for pre- and post-operation orders addressing all aspects of surgery measures.⁴²

Expanding Pharmacists' Clinical Services Aligns Hospital for Better Patient Outcomes

St. Joseph's Hospital, a 253-bed hospital in St. Paul, Minn., has worked gradually to improve its performance measures results by increasing the type of clinical services pharmacists

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provide.⁴³ Hospital pharmacists began reconciling patient medications three years ago.⁴³ Now, pharmacists conducting medication reconciliation also target their services to improve core measure performance.⁴³

Staffing has been a challenge for the hospital in this tough economic environment that led to hospital layoffs, although no pharmacy personnel were affected.⁴³ Those hard times are improving as the hospital hired 3.2 full-time equivalent pharmacists in 2011 who collect patient medication histories prior to surgical procedures; expand emergency room pharmacist coverage from 8 to 12 hours each weekday and from zero to 8 hours each weekend day; and review congestive heart failure patients' medications prior to discharge.⁴⁴

Ensuring that pharmacy staff are practicing to the limits of their license is another improvement the hospital made.⁴³ Pharmacy technicians were redeployed so that they handle more of the drug distribution duties, which has allowed the maximization of pharmacists' services.⁴³ For example, more fully utilizing pharmacy technicians allowed St. Joseph's to create a decentralized mental health/addiction medicine pharmacist position.⁴³

One of the hospital's main challenges is to continue demonstrating pharmacists' value and directly link their contributions to patient outcomes and lower costs.⁴³

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References

- 1 Patient Protection and Accountable Care Act of 2010, Pub.L. No. 111-148.
- 2 National Institute for Healthcare Management (NICHM). Understanding U.S. Healthcare Spending. Washington, D.C.: NICHM; 2011 Jul. <http://www.nihcm.org/images/stories/NICHM-CostBrief-Email.pdf> (accessed 6 Jul 2011).
- 3 Chisholm-Burns MA, Lee JK, Spivey CA et al. US pharmacists' effect as team members on patient care: Systemic review and meta-analyses. *Medical Care*. 2010; 48:923-33.
- 4 Gillespie U, Alassaad A, Henrohn D et al. A comprehensive pharmacist intervention to reduce morbidity in patients 80 years or older: a randomized controlled trial. *Arch Intern Med*. 2009; 169:894-900.
- 5 Chisholm-Burns MA, Zivin JSG, Lee JK et al. Economic effects of pharmacists on health outcomes in the United States: a systematic review. *AJHP*. 2010; 67:1624-34.
- 6 Agency for Healthcare Research and Quality (AHRQ). 2010 National Healthcare Quality Report. Rockville, MD: AHRQ; 2011 Feb.
- 7 Lehrman WG, Elliott MN, Goldstein E et al. Characteristics of hospitals demonstrating superior performance in patient experience and clinical process measures of care. *Med Care Res Rev*. 2010; 67:38-55.
- 8 Williams SC, Schmaltz SP, Morton DJ et al. Quality of care in U.S. hospitals as reflected by standardized measures, 2002-2004. *NEJM*. 2005; 353:255-64.
- 9 American Hospital Association (AHA). The Opportunities and Challenges for Rural Hospitals in an Era of Health Reform. Washington, DC: AHA; 2011 April.
- 10 Joynt KE, Harris Y, Orav EJ et al. Quality of care and patient outcomes in critical access rural hospitals. *JAMA*. 2011; 306:45-52.
- 11 Deloitte Center for Health Solutions. Value-based Purchasing: A strategic overview for healthcare industry stakeholders. Deloitte Center for Health Solutions: Washington, DC. 2011.
- 12 Centers for Medicare & Medicaid Services (CMS). Roadmap for Implementing Value Driven Healthcare in the Traditional Medicare Fee-for-Service Program. Woodlawn, MD: CMS. http://www.cms.gov/QualityInitiativesGenInfo/downloads/VBPRoadmap_OEA_1-16_508.pdf (accessed 2011 Jun 13).
- 13 American Recovery and Reinvestment Act of 2009, Pub.L. No. 111-5.
- 14 Centers for Medicare & Medicaid Services (CMS). Medicaid program; payment adjustment for provider-preventable conditions including health care-acquired conditions. *Fed Regist*. 2011; 76:9283-9295.
- 15 Patient Protection and Accountable Care Act of 2010, Pub.L. No. 111-148 Sec. 2702.
- 16 Centers for Medicare & Medicaid Services (CMS) Medicare program; hospital inpatient value-based purchasing program. *Fed Regist*. 2011; 76:26490-26547.
- 17 Patient Protection and Accountable Care Act of 2010, Pub.L. No. 111-148 Sec. 3001.
- 18 Centers for Medicare & Medicaid Services (CMS). Medicare program; Hospital Inpatient Value-Based Purchasing Program. *Fed Regist*. 2011; 76: 26490-26547.
- 19 Clinical process of care measures will address acute myocardial infarction, heart failure, pneumonia, healthcare-associated infections, surgeries, and Hospital Consumer Assessment of Healthcare Providers and Systems Survey (HCAHPS) results.
- 20 Outcomes measures for fiscal year 2014 will be mortality, Patient Safety Indicators, Inpatient Quality Indicators Composite Measures, and additional measures to be adopted.
- 21 Centers for Medicare & Medicaid Services (CMS). Medicare and Medicaid programs: hospital outpatient prospective payment; ambulatory surgical center payment; hospital value-based purchasing program; physician self-referral; and patient notification requirements in provider agreements. *Fed Regist*. 2011; Nov 30. <https://s3.amazonaws.com/public-inspection.federalregister.gov/2011-28612.pdf> (accessed 2011 Nov. 16).
- 22 The Dartmouth Institute For Health Policy & Clinical Practice. After Hospitalization: A Dartmouth Atlas report on post-acute care for Medicare beneficiaries. Lebanon, NH: The Dartmouth Institute For Health Policy & Clinical Practice; 2011 Sept 28.
- 23 Jenks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. *N. Engl J Med*. 2009; 360: 1418-28.
- 24 National Quality Forum (NQF) NQF-Endorsed Standards. http://www.qualityforum.org/Measures_List.aspx?#k=readmission (accessed 12 Jul 2011).
- 25 Patient Protection and Accountable Care Act of 2010, Pub.L. No. 111-148 Sec. 3025.
- 26 MedPac Report to the Congress. Promoting Greater Efficiency in Medicare. Jun 2007. http://www.medpac.gov/documents/jun07_entirereport.pdf (accessed 12 Jul 2011).
- 27 Centers for Medicare & Medicaid Services (CMS). Medicare Program; Proposed changes to the hospital inpatient prospective payment systems for acute care hospitals and the long-term care hospital prospective payment system and fiscal year 2012 rates. *Fed Regist*. 2011; 76:25788-26084.
- 28 Vest JR, Gamm LD, Oxford BA et al. Determinants of preventable readmissions in the United States: a systematic review. *Implementation Science*. 2010; 5:88.
- 29 Ashton CM, Kuykendall DH, Johnson ML et al. The association between the quality of inpatient care and early readmission. *Ann Intern Med*. 1995; 122:415-21.
- 30 Smith DM, Giobbie-Hurder A, Weinberger M et al. Predicting non-elective hospital readmissions: a multi-site study. *J Clin Epidemiol*. 2000; 53:1113-8.
- 31 Joynt KE, Orav EJ, Jha AK. Thirty-day readmission rates for Medicare beneficiaries by race and site of care. *JAMA*. 2011; 305:675-81.
- 32 Boulding W, Glickman SW, Manary M et al. Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. *Am J Manag Care*. 2011; 17:41-8.
- 33 van Walraven C, Jennings A, Taljaard M et al. Incidence of potentially avoidable urgent readmissions and their relation to all-cause urgent readmissions. *CMAJ*. 2011 Aug 22 [epub ahead of print].
- 34 Patient Protection and Accountable Care Act of 2010, Pub.L. No. 111-148 Sec. 3023.
- 35 Centers for Medicare & Medicaid Services (CMS). Fact Sheet. Bundled payments for care improvement initiative. 2011 Aug 23. <http://www.innovations.cms.gov/documents/pdf/Fact-Sheet-Bundled-Payment-FINAL82311.pdf> (accessed 2011 Aug 26).
- 36 United States Government Accountability Office (GAO). Letter. Subject: Medicare: Private Sector Initiatives to Bundle Hospital and Physician Payments for an Episode of Care. Washington, DC; GAO. 2011 Jan 11.
- 37 Gurnani PK. Rush University Medical Center, personal communication, 2011 Jun 7.

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- 38 Bauer, KA, West JE, Balada-Llasat et al. An antimicrobial stewardship program's impact with rapid polymerase chain reaction methicillin-resistant staphylococcus aureus/S. aureus blood culture test in patients with S. aureus bacteremia. *CID*. 2010; 51:1074-80.
- 39 Goff D., The Ohio State University, personal communication, 2011 Jun 8.
- 40 Lenz TL, Creighton University, personal communication, 2011 Jun 1.
- 41 Lenz TL, Monaghan MS. Pay-for-performance model of medication therapy management in pharmacy practice. *J Am Pharm Assoc*. 2011; 51:425-31.
- 42 Worden J, McPherson Hospital, personal communication, 2011 14 Jun.
- 43 Sinclair JS, St. Joseph's Hospital, personal communication, 2011 25 May.
- 44 Sinclair JS, St. Joseph's Hospital, personal communication, 2012 4 Jan.