

Call for Panels

Paying for Good Performance

Sharon Arnold, Ph.D.

Sunday, June 28 * 11:30 A.M.-12:30 P.M.

Panel Overview: Incentives influence behavior. Policymakers are increasingly exploring the use of financial and non-financial incentives to improve quality through public reporting and pay-for-performance (P4P) initiatives. This panel will present evidence from three studies that examine the impact of P4P on quality and patient outcomes. Both intended and unintended consequences will be examined. The first panelist will provide an in-depth look at one pay-for-quality intervention by a major private health plan, including preliminary findings showing only a modest effect on quality. The second panelist will describe the advantages and disadvantages of various methods by which to assess hospitals' quality performance and will provide the results of their review of non-federal U.S. hospitals, including programs which may disadvantage minority patients. The third panelist, focusing on hospitals in the Premier Hospital Quality Incentive Demonstration, will share results, which show improved quality in hospitals serving the poor following the introduction of financial incentives. The panelists will discuss whether their findings portend real potential for P4P to improve quality and discuss the importance of the particular measure and scoring mechanism to achieving the desired outcomes, as well as the potential for P4P to address health disparities.

▪ **Paying for Quality: A Regional Natural Experiment**

Douglas Conrad, Ph.D., M.B.A., M.H.A.

Presented by: Douglas Conrad, Ph.D., M.B.A., M.H.A., Professor, Health Services, University of Washington, Box 357660, Seattle, WA 98195-7660, **Phone:** (206) 616-2923, **Email:** dconrad@u.washington.edu

Research Objective: (1) To estimate short- and long-term effects of a two-component pay-for-quality intervention by a major private health plan applied to selected Washington State medical groups on quality and resource use; (2) To interpret and explain those intervention effects in light of the organizational structure, quality improvement activities, internal financial incentives, and market environment of the medical groups.

Study Design: Quasi-experimental, observational study with "waiting" control group: (1) One intervention component (the quality scorecard, or QSC) entails standardized measurement and public reporting of 12 clinical quality indicators and 5 patient satisfaction indicators at the medical group level; (2) the second component (the quality incentive program, or QIP) provides potential incentive payments to participating group practices based on performance on the clinical quality and patient satisfaction indicators.

Nineteen participating medical groups were allocated to one of three study arms in any given year: QSC only, QSC plus QIP, or control group (those groups never having participation in the QSC or QIP). Quality and resource use indicators are scored at the individual member level and aggregate based on the universe of all eligible plan members on each indicator in each group, and patient satisfaction scores are aggregated, based on a random sample of 400 members per group. Each group's metrics were tracked annually for the baseline period (pre-intervention) of 2001-2002 and the five post-intervention years of 2003-2007. Key informant interviews and mailed surveys of each medical group's chief medical officer and administrator were conducted to provide qualitative and quantitative data for interpretation of potential intervention effects. Quality and resource use are analyzed at the individual member level, adjusting for clustering of individual plan members within medical groups. The phasing of medical into the QSC and QIP intervention in different years facilitates two types of analysis: (1) difference-in-differences (D-I-D) approach; (2) multiple-case, interrupted time series over 7 years – (a) using each group as a case and (b) clustering cases by

intervention status at a given point in time. Combining the two analytic strategies enhances the robustness of inferences. Potential selection bias in the estimates is mitigated by the D-I-D approach for time-invariant unobserved characteristics, and presence of two years of baseline data allows some adjustment for time-varying characteristics.

Population Studied: Nineteen large medical groups in Washington state: 5 “pure” controls (never having participated in either intervention component), 7 QSC only participants, and 7 QSC plus QIP groups.

Principal Findings: Preliminary findings at the medical group level show that selected quality indicators improved more over time among intervention participants compared to controls, but differential effects were mixed overall and modest in magnitude.

Conclusions: Financial incentives of modest size from a single payer, coupled with performance measurement and public reporting, are likely to have modest impacts on quality performance.

Implications for Policy, Delivery or Practice: To achieve substantial impact, financial incentives must be large enough to cover practices’ costs of adjusting quality infrastructure and should be coupled with clear (plain language) and easily accessible public reports of practice performance. Multi-payer, coordinated interventions are encouraged.

Funding Source(s): RWJF

▪ **The Impact of Pay for Performance on Hospitals that Care for the Poor**

Ashish Jha, M.D., M.P.H.; E. John Orav, Ph.D.; Arnold Epstein, M.D., M.A.

Presented by: Ashish Jha, M.D., M.P.H., Assistant Professor, Health Policy and Management, Harvard School of Public Health, 677 Huntington Avenue, 4th Floor, Boston, MA 02115, **Phone:** (617) 432-5551, **Email:** ajha@hsph.harvard.edu

Research Objective: Provision of financial incentives to improve quality of care, or “pay for performance” (P4P), has become increasingly common, but its potential impact on hospitals that care for the poor is unknown. Therefore, we sought to determine the impact of P4P on the quality of care among hospitals that care for more poor patients compared to hospitals that care for fewer poor patients.

Study Design: We used a retrospective cohort study design to examine hospitals that participated in the Premier Hospital Quality Incentive Demonstration. We examined quality scores for acute myocardial infarction (AMI), congestive heart failure (CHF), and pneumonia among hospitals with a large Disproportionate Share (DSH) Index, a marker of caring for the poor, versus hospitals with a low DSH Index to determine if high DSH hospitals had comparable attainment and improvements under P4P.

Population Studied: Hospitals participating in the largest Medicare P4P demonstration project.

Principal Findings: High DSH hospitals (those that disproportionately care for the poor) had lower quality performance compared to low DSH hospitals prior to the onset of P4P for all three conditions, both nationally and among those participating in Premier. Under financial incentives, Premier hospitals with a high DSH index responded more vigorously to financial incentives (e.g. improvements for AMI 5.3% versus 3.4%, $p=0.04$) compared to hospitals with a low DSH index, although the improvements were more comparable when adjusted for lower baseline performance. After three years under P4P, high DSH hospitals had caught up to the low DSH hospitals for all three conditions. Finally, when we compared hospitals within Premier P4P to hospitals not in P4P, we found that among hospitals with a high DSH index, hospitals under P4P outperformed hospitals that were not under P4P.

Conclusions: Hospitals that served the poor had lower baseline performance but under P4P, they improved rapidly and caught up to hospitals with few poor patients.

Implications for Policy, Delivery or Practice: Pay for performance seems to be effective at improving quality for hospitals that serve the poor and may be a useful tool for reducing disparities in care.

Funding Source(s): RWJF

▪ **Examining the Quality of Hospital Care & Simulating the Impact of Several Pay-for-Performance Scoring Methods on Hospital Rankings**

Joel Weissman, Ph.D.; Christine Vogeli, Ph.D.; Romana Hasnain-Wynia, Ph.D.; Raymond Kang, M.A.; Mary Beth Landrum, Ph.D.; Lisa Iezzoni, M.D.

Presented by: Joel Weissman, Ph.D., Health Policy Advisor to the Secretary, Massachusetts Executive Office of Health & Human Services, Commonwealth of Massachusetts, One Ashburton Place, Boston, MA 02114, **Phone:** (617) 573-1600, **Email:** joel.weissman@state.ma.us

Research Objective: Hospital quality measures, such as those used by CMS demonstrations, generally compute scores for individual processes of care for eligible patients on each opportunity to receive applicable services. Other approaches consider all processes applicable to a specific patient, e.g., whether or not all relevant processes occurred (all-or-none approach). How these different scoring methods affect hospital ratings and patients served is unknown.

Study Design: We used patient-level Hospital Quality Alliance data for heart failure (HF), acute myocardial infarction (AMI) and pneumonia (PNE) and calculated hospital-level composites using three methods: 1) an opportunity-based method (OBM); 2) an all-or-none method (AON); and 3) a method that calculated differences between scores for whites and minorities (disparities method). We calculated national performance levels and simulated effects on hospital rankings, generally, and on hospitals where minority patients were treated.

Population Studied: 2.3 million individuals receiving care in 4,308 non-federal U.S. hospitals in 2005.

Principal Findings: Median hospital scores using the OBM were 92%, 74%, and 89% for AMI, HF, and PN, respectively. AON median scores were lower - 81%, 53%, and 41%, respectively - and had a wider distribution among hospitals. AON scores were sensitive to the number of eligible processes; omitting selected processes produced disproportionately large changes in the composite scores. Kappa statistics comparing top quintile hospital ranking assignment for these two methods were fairly high - 0.84, 0.92, and 0.84, respectively. The percentage of hospitals that changed top quintile assignment depending on the method was 7% for HF and 13% for AMI and PN. Rankings for small non-teaching hospitals improved using the AON method. At hospitals with at least 30 whites and 30 minorities, AON median scores for whites were 83%, 56%, and 39% for the three conditions; for minorities the scores were 81%, 53%, and 38%. Using overall AON scores to rank hospitals, 64% of

Whites were treated in the top half of ranked hospitals compared with only 52% of minorities (and likewise, only 36% of Whites were treated in the bottom half of ranked hospitals compared with 48% of minorities). However, when using the disparities method to rank hospitals, the percentages of patients treated in the top and bottom tiers were closer (top tier: 47% of Whites and 51% of minorities). Similar patterns occurred for both HF and PNE.

Conclusions: Performance levels based on AON composites indicate considerable opportunities for improvement. Both the number of indicators and specific patient and hospital factors are related to the likelihood of perfect care.

Implications for Policy, Delivery or Practice: AON composites provide a more granular approach to assessing inpatient quality by adding the intuitive appeal of the whole patient perspective. Using such methods allows for stratification of hospital scores by patient characteristics, and may offer more opportunity for quality improvement given the greater spread of scores, although the impact on winners and losers should be taken into account. Programs that decrease payments to lower ranked hospitals based on overall quality scores may disadvantage minority patients if hospitals serving many minorities have lower quality than other hospitals.

Funding Source(s): RWJF, The Commonwealth Fund

Call for Panels

Consumer Use of Information to Make Health Care Decisions

Bonnie Austin, J.D.

*Monday, June 29 * 11:30 A.M-1:00 P.M.*

Panel Overview: In recent years, policymakers have embraced the notion of empowering consumers through greater information to participate more fully in care decisions. Recent initiatives include public reporting of quality measures and cost transparency in order to drive consumers to higher quality and lower cost providers. In addition, tools are being created to enable consumers to share more fully in treatment decisions. This panel will examine in

detail the results of several initiatives to provide more information to consumers to encourage improved decision-making. The first panelist will explore whether Medicare Part D beneficiaries make fully informed decisions regarding their choices in Part D plans and discuss how using select psychological principles when presenting plan cost information affects consumers' choice in plans, costs, and satisfaction. The second panelist will discuss strategies for presenting physician performance data to maximize consumer understanding and will summarize the extent to which consumers switch to higher quality, lower cost providers as a result of this presentation. The final panelist will report on the impact of education materials provided by a consumer-driven health plan (CDHP), including the extent to which consumers become more cost conscious and whether they are better able to make informed decisions about where to seek care. The panelists will present the findings from these studies and will provide insight into whether increased consumerism has the potential to reform the health care system to improve quality and/or decrease costs.

▪ **Involving Consumers in Physician Choice**

Karen Donelan, Ed.M., S.D.; Sowmya Rao, Ph.D.; David Blumenthal, M.D., M.P.P.; Stephen Kosslyn, Ph.D.; Jennifer Shepard; Robert Rogers, B.A.

Presented by: Karen Donelan, Ed.M., S.D., Senior Scientist in Health Policy, Institute for Health Policy, Massachusetts General Hospital, 50 Staniford Street, 9th Floor, Boston, MA 02478,
Phone: (617) 726-0681, **Email:** kdonelan@partners.org

Research Objective: Given the advent of consumer-directed health plans and increased interest in measuring physician performance, what is the best way to display physician performance data in order to maximize consumer comprehension and the propensity to switch to higher performing (higher quality, lower cost) physicians?

Study Design: In this two phase project, we first tested consumer comprehension of fictional physician performance data (PPD) in six different display types with seven common variables (age, gender, board certification, malpractice experience, technical quality, cost, patient satisfaction). Working with a national health plan we used letters sent by

U.S. mail to employees of a large national firm that offers both PPO and CDHP plans to employees. Employees were recruited to participate in an online experiment and were paid \$20. One wave of recruitment letters yielded 240 participants. Findings from this first phase were used to develop a web-based PPD tool with optimal display characteristics. A link to the tool was provided through www.myuhc.com, the consumer portal of a major health plan. In a second phase, subjects were randomized to see the display or not, and then asked a number of questions about propensity to switch primary care physicians based on cost, quality and patient satisfaction alone and in combination. In August-September 2008, 3,400 respondents completed the phase 2 online test. Ten incentives of \$100 were awarded by lottery.

Population Studied: Phase 1: Working-age adults with employer-sponsored coverage. Phase 2: Adults (over 18) enrolled in a large commercial health plan.

Principal Findings: Phase 1 findings showed that comprehension was maximized by two displays—a table with stars and text, and histograms with a 100 point scale. Phase 2 allowed respondents to toggle between these displays. Phase 2 findings showed that 88% of all respondents could identify the quality-maximizing, cost-minimizing physician in the displays. Twenty-five percent of display and 28% of non-display respondents had baseline rates of prior switching of PCPs. Among display respondents, 41% expressed willingness to switch from current PCP based on quality, 25% based on cost, 41% based on patient satisfaction ratings, 55% based on quality/cost combined, and 62% based on quality/cost/satisfaction combined. Among non-display respondents, 38% expressed willingness to switch from current PCP based on quality, 24% based on cost, 43% based on patient satisfaction ratings, 59% based on quality/cost combined, and 65% based on quality/cost/satisfaction combined. Propensity to switch was most influenced by data on patient satisfaction, then quality, and finally cost. Participants self-reporting enrollment in the health plan's CDHP product were more likely than other respondents to consider switching based on cost alone, and to a lesser extent, based on quality alone and the quality/cost combination. Respondents reporting fair/poor health status, disability limiting daily activity, or one of eight chronic illnesses were less likely to consider switching.

Conclusions: Consumers express a willingness to change PCPs, in theory, when presented with data demonstrating higher performance. The effect is much stronger for differences in technical quality and patient satisfaction than for cost.

Implications for Policy, Delivery or Practice: Optimal PPD display may not have a significant impact on switching behavior but may increase comprehension.

Funding Source(s): RWJF

▪ **How Valid are the Assumptions Underlying Consumer-Driven Health Plans?**

Judith Hibbard, Dr.P.H.; Jessica Greene, Ph.D.

Presented by: Judith Hibbard, Dr.P.H., Professor, Planning, Public Policy, & Management, University of Oregon, 119 Hendricks Hall, Eugene, OR 97403, **Phone:** (541) 346-3364, **Email:** jhibbard@uoregon.edu

Research Objective: One of the appeals of consumer-driven health plans (CDHPs) is the belief that the financial incentives, enhanced choices, and increased information, will stimulate consumers to become activated, informed users of care. A key assumption is that with these incentives and supports, consumers will make more cost-effective choices. Further, an explicit goal of the CDHP approach is to activate consumers to be better managers of both their health and their health care. In this analysis we examine the degree to which CDHP enrollees become more activated (take a greater role in managing their health and health care) and make more cost-effective choices after enrolling in a CDHP.

Study Design: Cost-effective choices were examined in two different ways. First, employing a methodology based on ICD9 codes and the Oregon Health Plan priority list, chronic and acute care visits were categorized as either high priority (evidence for the efficacy of medical intervention) or low priority (little evidence for the efficacy of medical intervention). Second, in a separate analysis, we looked at the degree to which enrollment in a CDHP was related to maintaining usage of essential chronic disease medications.

Population Studied: The study examines the employees of a large manufacturing firm and follows employees who opt into a CDHP as well as those who remain in a PPO. The data includes three

waves of survey data linked with claims data for the year prior to enrollment and two years post enrollment.

Principal Findings: The findings show that consumers do become more cost sensitive after they enroll in a CDHP, cutting back on utilization, as compared to those remaining in the PPO and also compared to their pre-CDHP enrollment. However, they are as likely to cut back on high priority care as on low priority care. That is, they are responding to financial incentives, but they are doing so in an indiscriminant way, cutting back on both needed and unneeded care. This same pattern emerged in looking at whether chronic disease drug regimens were maintained. Those in the CDHP were more likely to cease taking these drugs.

Conclusions: Consumers need more support for making cost-effective choices than the first generation CDHPs provided.

Implications for Policy, Delivery or Practice: Greater use of evidence-based benefit design will help move consumers to more cost-effective choices. More explicit supports to encourage activation will also be necessary to encourage consumers to be more proactive managers of their health and health care.

Funding Source(s): RWJF

▪ **Informational Messages & Improved Decisions: The Case of Seniors' Choice of Medicare Drug Plans**

Marian Wrobel, Ph.D.; Jeffrey Kling, Ph.D.; Sendhil Mullainathan, Ph.D.; Eldar Shafir, Ph.D.; Lee Vermeulen, M.S.

Presented by: Marian Wrobel, Ph.D., Research Associate, Ideas42, Institute for Quantitative Social Science, Harvard University, 1737 Cambridge Street, Cambridge, MA 02138, **Phone:** (617) 495-5865, **Email:** marian.wrobel@gmail.com

Research Objective: While neo-classical economics and related public policy approaches assume individuals make optimal choices among available options, behavioral research suggests that individuals are often reluctant to choose from among large arrays of options, among other things, finding it difficult to gauge the options' relative worth. In that framework, subtle contextual factors – such as how or what information is presented – may have a significant impact on choice.

Our research objective was to determine whether seniors were making robust, fully informed choices among Medicare drug plans, defined as choices they themselves would not change, and to evaluate the role of behaviorally sensitive information in affecting choices.

Study Design: Randomized experiment. During the 2006 open enrollment period, the information group received a letter showing the potential savings from switching to the lowest-cost plan. This letter was based on information readily available from Medicare but designed using psychological principles known to promote action. The comparison group received a letter that referred them to the Medicare website, where the same information was available.

Population Studied: Patients of a university hospital. Over 65. Enrolled in Medicare Part D. Not eligible for subsidies.

Principal Findings: 28% of seniors in the information group switched plans, compared to 17% in the comparison group. Based on drugs used at the time of plan selection, the decrease in predicted cost for the entire information group relative to the comparison group was \$90 or 6% of the baseline total drug bill. The bulk of the information group's relative savings came in the form of out-of-pocket costs, not premiums. Based on the actual set of drugs used over the year, as opposed to drugs known at the time of selection, the decrease in realized costs for the entire information group, as opposed to the comparison group, was 4% of the total drug bill. There were no apparent differences in plan satisfaction, medication access, or plan quality between the two groups.

Conclusions: Additional efforts to distribute personalized information would lead to significant reductions in Medicare beneficiaries' costs. Also, it is difficult to explain these findings using rational theories of decision-making. Our preferred explanation emphasizes the potential for misperception of the differences among plans and the power of contextual factors in affecting decisions.

Implications for Policy, Delivery or Practice: Efforts to ameliorate the presentation and delivery of information, even when that information is otherwise generally available, can substantially affect choices, beyond what would be expected by simple normative assumptions or cost-benefit analyses. If the goal is to reduce beneficiaries' costs,

in the short term, we suggest that Medicare and other information intermediaries emphasize the importance of personalized cost estimates, publicize the significant cost differences among plans, and suggest ways to simplify the choice process. In the longer term, we recommend exploring more proactive policies to distribute personalized comparative information and ways to make information and context maximally conducive to robust choices. More generally, we recommend that public organizations charged with implementing choice-based policy pay close attention to the psychology of choice and the subtleties of information design.

Funding Source(s): RWJF, National Institute on Aging

Call for Panels

Understanding & Reducing Variation in Hospital Efficiency with Surgery

John Birkmeyer, M.D.

*Sunday, June 28 * 4:30 P.M.-6:00 P.M.*

Panel Overview: The quality and cost of surgical care vary widely across US hospitals. Measuring and improving the efficiency of surgical care is a top priority for payers and policy makers because surgery accounts for 30% of healthcare spending and a larger share of potentially preventable morbidity and mortality. We first focus on mechanisms underlying variation in hospital quality. The first paper addresses the problem of statistical noise and makes the case that reliability adjustment is considerably more important than risk adjustment in hospital rankings for surgery. Based on new data from Hospital Compare, the second paper describes relationships between hospital performance on evidence-based process measures (publicly reported by CMS) and adverse event rates with inpatient surgery. The third paper spotlights clinical mechanisms, with important implications for targeting quality improvement efforts. National Surgical Quality Improvement Program data show hospitals with high mortality rates tend to have similar overall complication rates, but markedly higher "failure to rescue" rates than lower mortality centers. Transitioning to the cost side of efficiency,

the fourth paper examines variation in hospital episode costs with common inpatient procedures and establishes a strong, negative relationship between hospital quality and costs. Finally, based on new methods developed for the Dartmouth Atlas of Health Care, the fifth paper describes the use of physician-hospital networks as accountability units and the considerable extent to which surgical rates vary across US hospitals. The panel discussion to follow will consider efforts to measure and improve surgical efficiency from both research and policy perspectives.

▪ **Variation in Hospital Payments for Coronary Artery Bypass Surgery**

Oner Baser, Ph.D.; Zhaohui Fan, M.D., M.P.H.; Justin Dimick, M.D., M.P.H.; John Birkmeyer, M.D.

Presented by: Oner Baser, Ph.D., Assistant Professor of Surgery, Michigan Surgical Collaborative for Outcomes Research & Evaluation, 411 North Fourth Avenue, Ann Arbor, MI 48104, **Email:** onur@med.umich.edu

Research Objective: Surgery accounts for almost half of overall spending for inpatient care. Under the Prospective Payment System, payments per surgical episode are relatively fixed and, in principle, should vary little across hospitals. In practice, however, hospital payments could vary widely according to case mix, coding practices, and quality of care. We examined variation in hospital payments for coronary artery bypass grafting (CABG), including the contribution of outlier payments and 30-day readmission costs to overall payments.

Study Design: Based on information from the national Medicare claims database, we examined total hospital payments for patients undergoing isolated CABG. Total hospital payments were assessed as the sum of DRG payments, outlier payments, and 30-day readmission payments for each surgical episode. Diagnostic Related Group (DRG) payments were standardized to account for regional- and hospital-specific differences in prices. Using regression techniques, we explored relationships between hospital-specific payments and quality, assessed using a previously validated composite measure of volume, risk-adjusted mortality, and performance with other cardiac procedures. Hospital quality was estimated based on

a non-contemporaneous patient sample (2004-5) to avoid over-estimating the strength of cost-quality relationships.

Population Studied: Fee-for-service Medicare patients undergoing isolated CABG grafting in 2006 (n=104,329).

Principal Findings: After adjusting for both patient case mix and price, average payments varied from approximately \$29,700 per episode for hospitals in the lowest quintile, to \$39,400 for hospitals in the highest quintile. Of this difference, \$4,600 could be attributed to variation in the use of higher paying DRGs (usually reserved for patients with either high illness severity or postoperative complications). However, over half of excess costs (\$5,000) were related to higher outlier payments and 30-day readmission costs at high cost hospitals, payments typically associated with patients experiencing adverse outcomes. Hospital payments and quality were strongly related. Average payments at hospitals in the lowest quality quintile were \$3,200 higher than at high quality hospitals.

Conclusions: CMS payments for CABG vary widely across hospitals. While some of this variation may be attributable to unmeasured differences in patient case mix, pricing, and coding practices (e.g., DRG upcoding), poor quality also appears to be an important contributor to excess payments at high cost hospitals.

Implications for Policy, Delivery or Practice: Public reporting, pay for performance and other quality improvement initiatives have the potential to reduce costs and as well improve patient outcomes with inpatient surgery.

Funding Source(s): NIA

▪ **Identifying Physician Hospital Networks to Profile Variation in Surgical Practice**

Julie Bynum, M.D.

Presented by: Julie Bynum, M.D., Assistant Professor, Medicine & Community & Family Medicine, Dartmouth Medical School, 35 Cenerra Parkway, Suite 202, Lebanon, NH 037766, **Email:** julie.p.w.bynum@hitchcock.org

Research Objective: The costs of surgical care vary widely across hospital referral regions in the United States. Rates of surgery—not price per episode—are the primary determinant of geographic variation in surgery costs. Although regional surgery rates are

useful, hospital-specific rates would be far more informative as accountability measures and potentially more actionable. However, methods for assigning the right “denominator” to hospitals or hospital systems have not been fully developed.

Study Design: Cross-sectional study based on national Medicare claims, 2002-2004.

Population Studied: 20% national sample fee-for-service Medicare beneficiaries aged 65 and older who were linked to the group of physicians who work in or near specific hospitals. We defined these physician-hospital networks (PHN) by linking physicians to the acute care hospital where they do their inpatient work or where their patients are admitted if no hospital billing.

Principal Findings: Using empiric methods to develop physician-hospital networks (PHN), 96% of eligible Medicare beneficiaries were linked with a specific physician-hospital network. 133,490 of surgeons who bill Medicare were successfully associated to the hospital where they billed most (N=4,226 hospitals). Among the 40% of physicians who billed at greater than one hospital, 75% of their admissions or surgeries were at the principle hospital. Preliminary analysis of 1,720 PHNs serving at least 1,000 Medicare beneficiaries showed that crude hospital-specific surgical rates varied considerably. While hip fracture surgeries rates only varied from 2.1 to 11.7 per 1000, back surgery varied from 4.7 to 107.7 per 1000 and coronary artery bypass surgery varied from 18.5 to 363.7 per 1000.

Conclusions: Surgical care is sufficiently concentrated within large physician-hospital networks and shows enough variation to allow studies of fee-for-service Medicare population surgical rates and hospital-specific practice patterns.

Implications for Policy, Delivery or Practice:

Many areas of surgical health services research, such as access, racial disparities, diffusion of technology, and efficiency of surgical-disease treatment, have been stymied by the absence of a population-based denominator for study. The physician-hospital network surgical rates will allow the study of these important policy- and delivery-related topics.

Funding Source(s): NIA

▪ **Ranking Hospitals on Surgical Mortality: The Importance of Reliability Adjustment**

Justin Dimick, M.D., M.P.H.; Doug Staiger, Ph.D.; John Birkmeyer, M.D.

Presented by: Justin Dimick, M.D., M.P.H., Assistant Professor of Surgery, Department of Surgery, VA Ann Arbor Healthcare System & University of Michigan Medical Center, 211 North Fourth Avenue, Ann Arbor, MI 48104, **Email:** jdimick@med.umich.edu

Research Objective: Surgical mortality rates are widely used in hospital report cards to measure performance with high-risk surgery. To date, much of the concern regarding the accuracy of these report cards focused on the data source (administrative vs. clinical) and the adequacy of risk adjustment. However, the issue of reliability adjustment has been largely ignored. The need to adjust for statistical reliability, a measure of precision, is particularly important when the number of cases per hospital is small, which is often the case in surgery. We sought to determine the implications of reliability adjustment on hospital mortality rates for surgery.

Study Design: We used national Medicare data to evaluate the impact of reliability adjustment on hospital mortality rankings. We first calculated risk-adjusted operative mortality at each hospital. Using hierarchical modeling, we next adjusted mortality for reliability using empirical Bayes techniques. We assessed the implication of this adjustment on the apparent variation across hospitals and the ability of historical mortality (2003-04) to forecast future mortality (2005-06).

Population Studied: We used 100% national analytic files from the Center for Medicare and Medicaid Services (CMS) for the years 2003 through 2006 for three operations targeted for quality measurement by the Leapfrog Group, the Agency for Healthcare Research and Quality (AHRQ), and other organizations: coronary artery bypass surgery, abdominal aortic aneurysm repair, and pancreatic cancer resection.

Principal Findings: Reliability adjustment diminished apparent variation for all three operations. For example, with coronary artery bypass surgery, the variation in mortality between the “worst” and “best” hospital quintiles went from an 8-fold difference (9.6% to 1.2%) to a 2-fold difference (6.0% to 3.2%). Pancreatic resection and abdominal aortic aneurysm repair showed even greater reductions. Adjusting mortality for reliability resulted in substantial improvement in discriminating future hospital performance,

particularly for the two uncommon procedures. For example, with pancreatic resection, the odds ratio (OR) of mortality at the “worst” vs. “best” hospital quintile was only 1.42 (95% CI, 1.11 to 1.82) prior to reliability adjustment. However, after reliability adjustment, the OR of mortality at the “worst” vs. “best” quintile was 4.08 (95% CI, 2.73 to 6.09). For abdominal aortic aneurysm repair, the OR of mortality at the “worst” vs. “best” hospital quintile went from 1.27 (95% CI, 1.11 to 1.45) to 1.58 (95% CI, 1.36 to 1.82) with reliability adjustment.

Conclusions: Reliability adjustment provides more accurate estimates of hospital mortality, resulting in fairer hospital rankings. Reliability adjusted mortality rates also better forecast future performance, particularly for uncommon surgical procedures.

Implications for Policy, Delivery or Practice:

Reliability adjustment should be used for measurement programs that track health care outcomes, including provider-lead registries, public reporting, and value-based purchasing efforts. The ability to forecast future performance is important for public reporting and value-based purchasing. Patients and payers most want to know how a hospital is performing when they need surgery, which is usually several years after mortality rates are assessed. For uncommon surgical procedures, this statistical technique should become standard for public reporting of hospital mortality.

Funding Source(s): NIA

▪ **Understanding Variations in Surgical Mortality: Differences in Complications or Failure to Rescue?**

Amir Ghaferi, M.D.; Justin Dimick, M.D., M.P.H.; John Birkmeyer, M.D.

Presented by: Amir Ghaferi, M.D., Research Fellow, Michigan Surgical Collaborative for Outcomes Research and Evaluation, 1500 East Medical Center Drive, 2207 Taubman Center, Ann Arbor, MI 48109, **Email:** aghaferi@med.umich.edu

Research Objective: Driven in large part by wide variations in surgical mortality rates across hospitals, payers and regulators are implementing strategies at reducing rates of surgical complications. For example, the Centers for Medicare and Medicaid Services’ (CMS) Surgical Care Improvement Project (SCIP) targets processes aimed at reducing

perioperative complications. Whether these efforts will be ultimately successful in reducing variation in hospital mortality is unclear. There is currently little evidence that high and low mortality hospitals differ with respect to their complication rates. Instead, low mortality hospitals may be distinguished primarily by their relative success in the timely recognition and management of complications once they occur. Death following a major complication is referred to as a “failure to rescue.” In this context, we sought to determine whether existing variations in mortality are due to differences in the incidence of major complications or differences in the management of major complications once they occur.

Study Design: We performed a cohort study using prospectively collected data from a clinical registry, The American College of Surgeons National Surgical Quality Improvement Project (ACS-NSQIP). The ACS-NSQIP includes a thorough ascertainment of postoperative complications using chart review and standardized definitions. Using risk-adjusted mortality for all inpatient surgery, we ranked hospitals and divided them into five equal groups (quintiles). We then compared the incidence of major complications and the rates of failure to rescue between hospitals in the lowest and highest mortality quintiles.

Population Studied: We studied 98,167 patients undergoing inpatient general and vascular surgery at the 123 hospitals participating in the ACS-NSQIP over a 2-year period (2005-06).

Principal Findings: Mortality rates varied 2-fold across hospital quintiles, ranging from 2.2% in the low mortality hospitals to 4.2% in the high mortality hospitals. High mortality and low mortality hospitals had nearly identical complication rates (10.5% vs. 10.2%, $p=.304$). However, high mortality hospitals had much higher rates of failure to rescue compared to low mortality hospitals (21.2% vs. 12.1%, $p<.001$). In comparisons between high mortality and low mortality hospitals, differences in failure to rescue rates were observed for 8 of the 9 major complications, with the largest differences for postoperative bleeding (37.3% vs. 13.7%, $p<.001$) and intra-abdominal infection (7.2% vs. 2.7%, $p<.01$).

Conclusions: High mortality and low mortality hospitals have relatively similar complication rates but markedly disparate rates of failure to rescue. Efforts to reduce variation in hospital mortality will

require greater focus on the timely recognition and management of complications.

Implications for Policy, Delivery or Practice: Pay-for-performance efforts aimed at reducing surgical complications may not reduce variation in hospital mortality with surgery. Mechanisms underlying differences in failure to rescue need to be elucidated and subsequently targeted in payer and provider-based quality initiatives.

Funding Source(s): NIMH

▪ **Process Compliance & Hospital Outcomes for Inpatient Surgery**

Lauren Nicholas, Ph.D., M.P.P.; Justin Dimick, M.D., M.P.H.; John Birkmeyer, M.D.

Presented by: Lauren Nicholas, Ph.D., M.P.P., Research Fellow, Institute for Social Research, University of Michigan, 426 Thompson Street, Ann Arbor, MI 48106, **Email:** lnichola@isr.umich.edu

Research Objective: Hoping to improve surgical outcomes, the Centers for Medicare and Medicaid Services (CMS) is encouraging increased hospital compliance with several evidence-based processes of perioperative care, using both public reporting of hospital data and financial incentives (P4P).

Whether this will reduce the wide variations in surgical mortality and other adverse events remains unclear. This paper investigates whether high rates of process compliance are associated with lower rates of risk-adjusted mortality and surgical complications for high-risk surgery.

Study Design: We study relationships between hospital compliance with targeted processes of care and adverse surgical outcomes by linking Hospital Compare to national Medicare claims data. Surgical outcomes, identified in national Medicare data, include risk-adjusted mortality and surgical complications including accidental puncture, postoperative hematoma /hemorrhage, and deep vein thrombosis. To assess hospital compliance, we calculate an opportunity score based on the number of times a hospital complies with recommended measures for each eligible patient on up to 5 indicators of pre and post-operative care. Hospitals are then ranked in quintiles by compliance with SCIP measures. Hierarchical logistic regressions are used to assess the relationship between adverse surgical outcomes and hospital process.

Population Studied: 229,665 Fee-for-Service Medicare beneficiaries (66 percent of patients are male, 91 percent White) undergoing one of six high-risk surgical procedures (abdominal aortic aneurism repair, aortic valve repair, coronary artery bypass graft, esophageal resection, mitral valve repair, and pancreatic resection) in 2,000 hospitals in 2005-2006.

Principal Findings: Hospital compliance rates vary widely, from 53.7 percent in hospitals in the lowest compliance quintile to 91.4 percent in the highest quintile. Hospitals with low process compliance had similar risk-adjusted mortality rates than those with high compliance (5.3% vs. 4.8%) Relative to average compliance, risk-adjusted mortality did not vary at low compliance hospitals (OR = 1.06, 95% CI 0.97-1.16) or high compliance hospitals (OR = 0.98, 95% CI 0.92-1.05). Stratified analyses by operation type also fail to show a significant association between hospital process compliance and mortality. Similarly, risk-adjusted complication rates at low and high-compliance hospitals were nearly identical (2.4% vs. 2.5%). Risk-adjusted post-surgical complication rates did not vary at low (OR=0.91, 95% CI 0.81-1.03) or high compliance hospitals (OR=0.98, 95% CI 0.90-1.07) relative to average compliance.

Conclusions: Although compliance with surgical process measures varies widely and low levels of compliance may themselves indicate problems in care delivery, we find little evidence that SCIP measures reliably track risk-adjusted adverse patient outcomes previously validated as quality indicators.

Implications for Policy, Delivery or Practice: Currently available information on Hospital Compare will not help patients identify hospitals with better outcomes for high-risk surgery. CMS needs to identify higher leverage process measures and devote greater attention to profiling hospitals based on outcomes.

Funding Source(s): NIA

Call for Panels

Lessons for Health Reform from the Military Health System

Thomas Croghan, M.D.

Monday, June 29 * 11:30 A.M.-1:00 P.M.

Panel Overview: The Department of Defense operates one of the largest highly integrated health care systems in the nation, covering more than nine million active duty, retiree, and dependent beneficiaries. Mirroring challenges faced by public and private health plans, the Military Health System (MHS) seeks to provide equitable, high-quality, affordable health care to a diverse population while reducing spiraling cost growth. Unlike other health plans, the MHS must also guarantee the medical readiness of its active duty beneficiaries and provide care for the wounded, roles that require greater flexibility and integration than is typical in civilian health plans. To achieve its mission, the MHS provides medical care through a combination of direct care in military clinics and hospitals and civilian-purchased care. It has implemented a variety of policies designed to improve access to care, including no or reduced premiums and deductibles, elimination of copayments for active duty beneficiaries and their dependents, and provision of lifelong comprehensive health benefits to Medicare-eligible beneficiaries. The MHS thus provides a unique opportunity to examine proposed solutions to vexing problems—including racial and ethnic disparities in health care, financial incentives for preventive care, and patient perceptions of care—of interest to policymakers contemplating expansions in health care coverage to socioeconomically diverse populations. In this panel, we will present four research papers that provide empirical analyses of various aspects of these important issues. Presentation of the papers will be followed by discussion of the importance of the research and its implications for the MHS and for the nation, with two discussants.

▪ **Racial & Ethnic Health Disparities in TRICARE**

Ann Bagchi, Ph.D.; Eric Schone, Ph.D.; Patricia Higgins, Ph.D.; Elder Granger, M.D.; S. Ward Casscells, M.D.; Thomas Croghan, M.D.

Presented by: Ann Bagchi, Ph.D., Senior Researcher, Mathematica Policy Research, 600 Alexander Park, Princeton, NJ 08816, **Phone:** (609) 716-4554, **Email:** abagchi@mathematica-mpr.com

Research Objective: As a major provider of healthcare for racial and ethnic minority groups, the Department of Defense (DoD) has affirmed its

commitment to the elimination of health disparities. Many studies have examined healthcare disparities in federal systems of care, and several have found that military health care systems, especially the Veterans Administration, provide more equitable care with fewer disparities than many civilian health care systems. However, little research has examined these issues within TRICARE, the DoD program providing healthcare coverage to members of the uniformed services, retirees, and their dependents. This study examines whether patterns of disparities observed within the larger U.S. healthcare system are also present in TRICARE by examining disparities in self-reported health status, access to and satisfaction with care, and use of preventive care.

Study Design: Our data come from the 2007 Health Care Survey of DoD Beneficiaries (HCSDB). Each quarter, the HCSDB surveys 50,000 TRICARE beneficiaries, asking questions about health status, experiences and perceptions of care, and use of preventive services. Analyses compared results from the 2007 HCSDB with similar measures gathered by the 2006 Consumer Assessment of Healthcare Providers and Systems (CAHPS®) Benchmarking Database (NCBD) for commercial health plans, and with data from the Agency for Healthcare Research and Quality's 2007 National Healthcare Disparities Report (NHDR). Statistical analyses were conducted using t-tests of differences in proportions with Bonferroni adjustment for multiple comparisons.

Population Studied: The study includes active duty military personnel, retirees, and family members who are eligible for TRICARE and who responded to one of the quarterly 2007 HCSDB surveys.

Principal Findings: Compared to black non-Hispanics, a higher proportion of Hispanic beneficiaries reported good to excellent health, with white non-Hispanic most likely to report good to excellent health status. However, on most measures, we found no differences between white non-Hispanic beneficiaries and members of other racial/ethnic groups. When differences did exist, minority populations were likely to report better access to and use of services than whites.

Conclusions: Although disparities exist in self-reported health status and some measures of preventive care, disparities in the care received by black non-Hispanics and Hispanics under TRICARE were often smaller than those observed in the nation as a whole. These findings suggest the need to

explore the characteristics of TRICARE that may be associated with more favorable outcomes for racial and ethnic minority groups.

Implications for Policy, Delivery or Practice: This study suggests the need for future research to identify factors that lead to smaller disparities in access and satisfaction within the TRICARE program. Such research may assist policy makers in designing systems of care in the private and other government health care systems that are more successful at reaching out to racial and ethnic minorities.

Funding Source(s): TRICARE Management Activity, U.S. Department of Defense

▪ **Looking Behind the Numbers: A Qualitative Exploration of Patient Experiences Within the Military Health System**

Kristen Purcell, Ph.D.; Rhoda Cohen, M.S.; Eric Zeidman, M.P.A.P.

Presented by: Kristen Purcell, Ph.D., Senior Researcher, Mathematica Policy Research, 600 Alexander Park, Princeton, NJ 08816, **Phone:** (609) 945-3331, **Email:** kpurcell@mathematica-mpr.com

Research Objective: Understanding patients' experiences and their perceptions of their care can provide critical information to improve health care delivery and better health outcomes. In a quarterly survey of TRICARE enrollees, the Health Care Survey of DoD Beneficiaries (HCSDB), TRICARE Management Activity (TMA) measures patient experiences among active duty personnel, active duty dependents, and retirees and their dependents. Recent HCSDB results show that, when compared with civilian benchmarks, TRICARE scores among active duty dependents fall significantly below civilian benchmarks in the areas of getting needed care, getting care quickly, courteous and helpful office staff, doctor communication, overall health care rating, and rating of one's personal doctor. Among retirees and their dependents, ratings fall below civilian benchmarks in the areas of getting needed care, getting care quickly, and overall ratings of health care. To better understand these findings, TMA conducted focus groups to hear in beneficiaries' own words the attitudes and beliefs they held about access to and delivery of services provided within the Military Health System.

Study Design: Twenty focus groups were conducted with active duty dependents and retirees and their dependents in the service areas of four continental United States (CONUS) military treatment facilities (MTFs) of varying size, type, and service affiliation. In selecting focus group locations, emphasis was placed on MTFs with low patient ratings on the HCSDB. An average of 15 individuals was recruited for each focus group, with an average of 10 attending each 90-minute session.

Population Studied: Active duty dependents aged 18 to 45, and retirees and their dependents ages 65 or younger who used TRICARE Prime as their primary insurance (for themselves or a child) and had received medical care in the past year (for themselves or a child), were eligible to participate.

Principal Findings: Beneficiaries expressed the greatest concern about continuity of care, choice of provider, access to care, and communication with their providers. There are significant differences in patient experiences across the direct and purchased care systems. Participants noted that the direct care system is characterized by lack of continuity of care, poor access to providers and specialists, little provider choice, and poor patient-doctor communication, while the civilian-based purchased care system seems to provide better opportunities for long-term doctor-patient relationships and better access to physicians. Direct care participants identified several strategies for potential improvement, such as direct e-mail communication with providers.

Conclusions: Our findings are consistent with prior research in managed care systems, in that choice of provider, continuity of care, and access to physicians are central to how patients perceive their health care experiences, issues that are particularly evidence in the MHS direct care system.

Implications for Policy, Delivery or Practice: Our findings regarding differing patient experiences in direct care and purchased care will inform TMA leadership about potential improvements to the MHS and highlight the importance of choice, continuity of care, and communication to patient experience and perceptions about care. Demonstration projects testing the identified methods for improvement in these domains should be conducted.

Funding Source(s): TRICARE Management Activity, U.S. Department of Defense

▪ **Racial & Ethnic Disparities in Children's Health Care in the Military Health System**

Kate Stewart, Ph.D.; Patricia Higgins, Ph.D.; Catherine McLaughlin, Ph.D.; Tamara Fidler, M.S.; Elder Granger, M.D.; S. Ward Casscells, M.D.

Presented by: Kate Stewart, Ph.D., Researcher, Mathematica Policy Research, 600 Maryland Avenue, Southwest, Suite 550, Washington, DC 20024, **Phone:** (202) 484-4829, **Email:** kstewart@mathematica-mpr.com

Research Objective: Previous research indicates significant racial and ethnic disparities in child health, particularly in the prevalence, treatment, and outcomes of children with asthma. These disparities may be attributed to differences in health coverage, access to care, and socioeconomic factors. It was unknown whether similar disparities exist among children in the Military Health System (MHS), which provides uniform baseline coverage (TRICARE) and more equal access to health care services through military treatment facilities (MTF) for all dependents. The aim of this study was to analyze racial and ethnic disparities among children enrolled in the MHS.

Study Design: We conducted a retrospective, cross-sectional, cohort study of children enrolled in TRICARE Prime, an HMO-like benefit designed for those who primarily use MTFs for health care. The data analyzed include claims for all inpatient, outpatient, and prescription drug services used in 2007, whether at an MTF or purchased care from a nonmilitary institution. Analyses measured differences in overall PAHs and non-injury-related ED use for Hispanics, non-Hispanic whites, non-Hispanic blacks, and other children, as well as differences in the prevalence, treatment, asthma-related PAH, and ED use among children with asthma.

Population Studied: The study cohort included children under 18 years of age as of January 1, 2007, who were continuously enrolled in TRICARE Prime throughout 2007 (N=1,159,058). Asthma analyses were limited to children with an asthma diagnosis aged 2-17 (N=86,136).

Principal Findings: Analysis of demographic characteristics revealed significant differences among racial and ethnic groups in age, primary source of medical care, and service branch of the parent sponsor. While the overall rate of PAH and

ER use was low, there were significant differences by race and ethnicity. Overall, Hispanic children were most likely to have any PAH (0.36 percent) and children classified as "Other" were least likely (0.27 percent). Black children were most likely to be diagnosed with asthma (10.8 percent) and to have a PAH for asthma (1.94 percent) compared to Hispanic children (prevalence 9.4 percent, PAH 1.46 percent) other race (8.65 percent, 1.08 percent), and white children (7.4 percent, 0.99 percent). Black children were also more likely to have an ER visit for asthma (0.97 percent) compared to Hispanic, other race, and white children (0.71 percent, 0.62 percent, and 0.41 percent, respectively). In contrast, Hispanic and white children were more likely to have a PAH for gastroenteritis (0.17 percent and 0.15 percent, respectively) compared to black and other race children (0.09 percent and 0.13 percent, respectively).

Conclusions: These descriptive analyses reveal significant differences in health outcomes among children enrolled in TRICARE Prime, but the source of these differences is not known. Possible explanations include differences in age, health risk or exposure, or disparities in provision of health care.

Implications for Policy, Delivery or Practice: Although many barriers to equitable provision of health care have been reduced or eliminated by the MHS, we find significant differences in health outcomes that remain to be explained. Further research into the nature of these differences will provide new insights into the nature and causes of health care disparities.

Funding Source(s): TRICARE Management Activity, U.S. Department of Defense

▪ **Effects of Patient Out-of-Pocket Cost Sharing on Colonoscopy & Sigmoidoscopy Use for Colorectal Cancer Screening**

Thomas Williams, Ph.D.; Arnie Brooks, M.P.P.; Wendy Funk, M.S.

Presented by: Thomas Williams, Ph.D., Director, Health Program Analysis & Evaluation, TRICARE Management Activity, Department of Defense, 5111 Leesburg Pike, Falls Church, VA 22102, **Phone:** (703) 681-3629, **Email:** Thomas.williams@tma.osd.mil

Research Objective: According to the American Cancer Society, in 2008 nearly 150,000 people in the US will be diagnosed with colorectal cancer (CRC) and about 50,000 will die of it. CRC is the third leading cause of cancer diagnosis and death in the U.S. Numerous academic studies indicate that cost sharing is a significant deterrent to preventive services use (PSU). This may be particularly true for “gold standard” screening colonoscopies (SCs) which often have large out-of-pocket (OOP) patient costs. To encourage PSU, Congress recently waived all OOP cost sharing for TRICARE military dependents and retirees and their dependents for preventive services, including SCs. The research question addressed here is, will a policy of eliminating TRICARE beneficiary OOP cost sharing lead to greater use of SCs?

Study Design: Cross-section time series TRICARE administrative claims data were analyzed and a logistic regression approach was employed to estimate the effects of OOP costs on SC use rates. Primary independent variables were cost sharing dummies for three mutually exclusive patient groups. A full cost sharing (FULLCS) group was the control where non-HMO patients paid roughly \$100 in TRICARE OOP costs per colonoscopy. Two zero cost sharing comparison groups included: (1) non-HMO beneficiaries with no cost sharing (NHNOCS)--where beneficiaries with other health insurance have all of their OOP cost sharing paid by TRICARE and (2) HMO enrollees with no cost sharing (HNOCS)—where TRICARE pays all preventive services OOP costs for HMO enrollees. Other independent control variables in the model included: a known patient/family history of CRC, the screening year (FY06 or FY07), various gender/age combinations, and military rank of sponsor as an income/education proxy.

Population Studied: 611,584 active duty military dependents and retirees/dependents age 50+ living in areas where only civilian CRC services are available and having one or more physician visits during FY06/FY07.

Principal Findings: SC rates were significantly higher for those with a CRC family history, FY07 use, beneficiaries with officer sponsors, women, and those who are older up to age 65 (all with $p<.001$). Model adjusted annual SC rates for the full cost sharing control group (FULLCS) were 7.7 percent. Adjusted annual SC rates for the non-HMO group without cost sharing (NHNOCS) and the HMO

group (HNOCS) were 34 percent and 49 percent higher respectively than the control group (both with $p<.001$). Results for the HNOCS group are similar in both FY06 and FY07; however, differences decline from 42 percent in FY06 to 27 percent in FY07 for the NHNOCS group.

Conclusions: The absence of roughly \$100 in TRICARE OOP cost sharing increases SC rates by 34 percent to 49 percent for military dependents and retirees/dependents age 50+. For the HMO group (49 percent increase), some of this difference is undoubtedly due to HMO selection, but the absence of cost sharing certainly has a large effect on this outcome.

Implications for Policy, Delivery or Practice: The nonpartisan National Commission on Prevention Priorities found SCs and other CRC screening for adults aged 50+ to be among the most cost-effective of all medical preventive services available. The policy of OOP cost sharing elimination should result in considerable increases in SC compliance for affected TRICARE beneficiaries.

Funding Source(s): TRICARE Management Activity, U.S. Department of Defense

Call for Panels

Better Ingredients, Better Rates: Information Needs for Improving Medicare

Kathleen Dalton, Ph.D.

*Tuesday, June 30 * 11:30 A.M.-1:00 P.M.*

Panel Overview: A series of data issues make it increasingly difficult for Medicare to efficiently and accurately set payment rates. Medicare is such a large player in the US health care system that its rates influence payments of other third party payers, and can affect production decisions. Systematically over-priced services create incentives for niche providers to exploit temporary profit opportunities and create pockets of overutilization, while underpricing can reduce supply and threaten access. Nursing cost compression discourages appropriate staffing and makes it harder to incentivize quality. Significant data problems to be addressed in this panel include the integrity of cost estimates, charge and cost compression, and new demands on patient assessment and other clinical data instruments to

meet demands for risk adjustment. The same data issues that affect FFS rate setting will be important to Medicare reform efforts, as we struggle to rationalize service delivery by matching costs with effectiveness and utilization with better outcomes. The panel's papers divide naturally into those related to improving/maintaining integrity of existing data and those relying on new data collection. The first paper presents results from CMS' work on cost data corrections to address charge compression, with examples where reporting errors have significantly overstated outpatient imaging costs. Two papers address payment and quality implications of nursing cost compression. The last paper describes ongoing efforts to collect new clinical data in support of more coordinated post-acute care payment. The panel will be moderated by Shannon Flood of CMS. Julian Pettengill of MedPAC will serve as discussant.

▪ **Low-Hanging Fruit: Correcting for Charge Compression & Other Errors in Cost Documentation**

Kathleen Dalton, Ph.D.; Sara Freeman, M.S.

Presented by: Kathleen Dalton, Ph.D., Senior Health Policy Analyst, Health Care Finance & Payments, RTI International, 3040 Cornwallis Road, Research Triangle Park, NC 27709, **Phone:** (919) 541-5919, **Email:** kdalton@rti.org

Research Objective: The inpatient prospective payment system (IPPS) has recently transitioned from charge-based to cost-based computations for DRG weights, while the outpatient system (OPPS) has always used cost-based weights. Both generate cost estimates based on Medicare cost report (MCR) data merged to claims data. We report findings from two CMS projects undertaken to identify the impact of charge compression and other cost data issues, on the accuracy of DRG and APC payment weights.

Study Design: Reconstruction and remodeling of cost estimates used for relative resource weights under IPPS and OPPS, following detailed review of MCR and claims data. We constructed multiple payment weights using alternative cost computations designed to correct for charge compression in select ancillary service areas and to correct for systematic errors found in cost report data, then evaluated their potential impact on procedure and provider payment distributions.

Population Studied: Medicare participating hospitals and all beneficiaries using acute inpatient and outpatient services 2004-2006

Principal Findings: Multiple substantive problems were identified in the cost report source data stemming from misclassification of non-standard cost centers and from technical issues in the mapping of cost report to claims data. Correcting these problems had relatively little effect on DRG weights, which are constructed from a wide array of services, but they caused major changes in the median APC costs used for OPPS payments including those for cardiac rehabilitation (+169%), Drug infusions (+35 to 50%), health education (+27%), MRI/CT (?30% to ?50%) and diagnostic cardiac catheterization (?13%). Substantial charge compression, which results from over-aggregation in the computation of cost-to-charge ratios for claims cost conversion, was identified as a problem in the cost estimates for medical devices and other supplies, certain classes of drugs, imaging services and interventional cardiology. These were found to cause additional substantial understatement in the weights for a small number of device-dependent DRGs, but affected a large number of APCs including plain film radiology (+50%), cardiac implants (+25 to +33%), drug infusions (+30%), several specialized infusion drugs (average of +18%), MRI/CT (?30 to ?50%) and drug administration for rehydration (?25%).

Conclusions: PPS payments for a small number of DRGs and a very large number of outpatient APCs are significantly distorted due to MCR data problems. Accuracy of outpatient prospective payment in particular can be greatly improved with better attention to cost report audit, provider education and review of cost assignment algorithms. Some forms of charge compression can be corrected in the shortrun using regression modeling to estimate their effects, but additional cost detail in the MCR would provide a better long-term correction.

Implications for Policy, Delivery or Practice: Better outpatient pricing has significant implications for service delivery and long-term health reform. Overpricing of expensive imaging procedures of the magnitude found in these studies has the potential to distort the market and encourage costly overutilization. Underpricing of services like cardiac rehabilitation and health education discourages hospitals from providing these products, even though they may be associated with lowering

long-term health costs for individuals with chronic disease.

Funding Source(s): CMS

▪ **Routine Costs Within the IPF Rates:
Implications of Over-Aggregation**

Edward Drozd, Ph.D.

Presented by: Edward Drozd, Ph.D., Senior Health Economist, Health Care Finance & Payments, RTI International, 3040 Cornwallis Road, Research Triangle Park, NC 27709, **Phone:** (781) 434-1716, **Email:** edrozd@rti.org

Research Objective: Prospective payment(PPS) for inpatient psychiatric facilities (IPF) is grounded in historical costs derived from the Medicare cost report (MCR). Because psychiatry patients use relatively few ancillary services, most of their reported costs are derived from a single per-diem computed from cost data aggregated at the level of the nursing units. This per diem reflects an average across all patients on the unit, over the course of the accounting year. Absence of accounting data to distinguish relative costliness of some types of patients compared to others limits the ability of the IPF PPS to develop accurate rates. Our initial study collected primary data to quantify unmeasured differences in daily staffing intensity on psychiatry inpatients, to test for compression in case-mix payment weights that would result from using routine per-diem costs as collected from the MCR. We review the implications of variation in psychiatric nursing intensity for equity in the distribution of Medicare payments across IPF facilities and subprovider units.

Study Design: Earlier primary data were collected on patient and staff times in 20 activities, from 40 psychiatric facilities and 66 sub-units within acute facilities, during years immediately preceding PPS implementation. Multivariate regression and clustering software were used to construct alternative measures of daily routine care. In this presentation we consider the hypothetical impact of unmeasured variation on current IPF-PPS margins. A review of post-PPS cost reports and claims is underway to identify actual trends and relate variation in IPF-PPS margins to earlier findings.

Population Studied: Medicare participating inpatient psychiatric facilities and subunits within acute facilities.

Principal Findings: Patient daily routine intensity of care was found to vary by a factor of 3 or more between the top and bottom 10% of days, with Medicare patients averaging 12.5% more staff time than non-Medicare. Deficits in ADL, dangerous behaviors and use of ECT contributed substantially to higher staffing intensity. Further, we found that patient ancillary costs could not predict substantial amounts of the routine cost variation.

Conclusions: IPF-PPS payments are likely subject to substantial cost compression due to unmeasured variation in routine costs. If certain types of patients are recognized as over- or under-paid under the new payment system, providers may have responded by practicing increasing selection and altering admission patterns. These behavioral responses may be detectible from review of post-PPS claims.

Implications for Policy, Delivery or Practice: If there is evidence of unintended provider behavioral changes consistent with adapting to cost compression, adjustments in the cost documentation that is used to support the payment weights should be considered. Differences in nursing intensity could be captured by altering the facility charge structures to reflect more and less costly patients, particularly through the use of incremental nursing fees, and applying cost-to-charge ratios rather than per-diems to assign costs to claims before recalibrating resource weights.

Funding Source(s): CMS

▪ **Medicare Assessment Data: How Do We Count Thee?**

Barbara Gage, Ph.D.

Presented by: Barbara Gage, Ph.D., Associate Director, Program on Aging, RTI International, 3040 Cornwallis Road, Research Triangle Park, NC 27709, **Phone:** (781) 434-1717, **Email:** bgage@rti.org

Research Objective: The Deficit Reduction Act of 2005 directed CMS to develop payment recommendations for Medicare post-acute care using standardized assessment data from acute and post-acute providers. The goal of this directive was to allow the comparison of costliness and outcomes across treatment settings. The current Medicare assessment tools use inconsistent items to measure medical, functional, and cognitive impairment levels. This inconsistency in data standards has

restricted CMS' ability to examine whether Medicare is paying different amounts to providers to treat the same type of case in an alternative setting.

Study Design: This study highlights the measurement differences between the 3 mandated Medicare assessment tools, including the MDS, OASIS, and the IRFPAI. Each tool contains items measuring similar concepts but based on different sources.

Population Studied: Medicare beneficiaries who use post-acute services.

Principal Findings: The Medicare program's ability to monitor the cost-effectiveness of its payments for post-acute care are significantly impeded by the absence of standard measures between settings. Function is measured three different ways in the current tools restricting the Medicare program from addressing important payment policy and certification issues. Analyses related to examining what patients are most appropriately treated in Inpatient Rehabilitation Facilities are dependent on the presence/absence of ICD-9 codes rather than using more relevant measures such as functional impairment scores. If standard function measures were used in IRFs and SNFs, the Medicare program could know whether similar patients had similar outcomes in different settings and set payment and coverage policies accordingly. In medically complex patients, the current administrative files are inadequate for measuring the extent of complexity. They offer number and types of comorbidities but other factors, such as frailty and certain complications, which strongly impact the level of nursing and physician care needed, are not available. Administrative files are inadequate for identifying this level of difference, yet the Medicare program is struggling to differentiate which populations are appropriate for high cost long term care hospitals.

Conclusions: Standardized information collected across settings on medical, functional, and cognitive impairments of individual beneficiaries is needed to better support the Medicare program's mandate of monitoring payments, access to appropriate care, and quality of care. Current initiatives of developing the standardized assessment tool, the CARE tool, will address these problems and allow more consistent review of patients admitted to care. This will improve payment policy, as well as support the QIO program, and various other on-going program management initiatives.

Implications for Policy, Delivery or Practice: Standardizing the assessment data used by the Medicare program has the potential to improve the cost-efficiency of the Medicare program .

Funding Source(s): CMS

▪ **Factoring Patient Variation in Nursing Costs into PPS Rates**

John Welton, P.H.D., R.N.; Laurie Zone-Smith, Ph.D., R.N.; Mary Hughes Fisher, R.N., M.S.N.

Presented by: John Welton, P.H.D., R.N., Associate Professor, College of Nursing, Medical University of South Carolina, 99 Lohathan Lucas Street, Room 527, Charleston, SC 29425, **Email:** weltonj@musc.edu

Research Objective: The inability to allocate direct nursing time (intensity) and costs to individual patients in the hospital has been a vexing and longstanding problem that likely distorts the payment system and essentially makes nursing care invisible to policy makers and payers because these data are embedded in fixed daily room and board charges.

Study Design: We use data from an instrument used to collect actual nursing time delivered to each patient during a shift self reported by registered nurses at a single academic medical center in the Southeast. Data from 11,582 patient days for adult, non psychiatric MDC from 2004 through 2005 were analyzed .

Population Studied: Acute patients admitted in 2004-2005 to a single academic medical center in the Southeast

Principal Findings: The following findings represent multiple published studies: 1. within the adult medical/surgical (routine care) units, when the variable nursing time and direct cost component was separated from fixed facility costs, we found the actual R&B charge under represented nursing costs by 32% or 1-2 million dollars per quarter; 2. the actual nursing intensity varied from 5 to 15 hours on routine care units and 12-24 hours in the intensive care units; 3. the mean nursing intensive for each patient for routine or ICU care was inversely correlated with the DRG cost weight; when the average nursing time calculated using the nurse-patient assignment was regressed on the actual time, 77% of the day shift and 81 % of the night shift variability in nursing intensity was explained.

Conclusions: The aggregate interpretation of these studies supports the notion that nursing intensity and costs are highly variable, not adequately represented within the existing charge data, and nursing intensity varies differently than medical intensity (represented by ancillary charges). We potentially have discovered a simple way to correct this problem using data from an existing and ubiquitous source, the nurse-patient assignment. We will discuss the potential to calculate nursing time and cost estimates and separate them from routine and intensive care charges using an existing UB04 code, 023X Nursing Incremental Charges in a feasible and administratively simple method.

Implications for Policy, Delivery or Practice: If patient level nursing intensity and costing were available in the UB04 dataset, these data could be used to compare nursing care within and across multiple hospitals for several purposes such as analyzing how nursing resources are used in acute care settings relative to clinical outcomes, costs and quality, adjusting the DRG payment weight to better reflect differences in nursing intensity, and to inform policy makers and payers about the nursing component of value-based purchasing.

Call for Panels

Investigating the Causes of Medicare Spending Growth

Melinda Beeuwkes Buntin, Ph.D.

*Sunday, June 28 * 11:00 A.M.-12:30 P.M.*

Panel Overview: This panel seeks to provide a better understanding of the sources of Medicare spending growth in order to inform Medicare policy. The first paper explores the role of end-of-life spending and finds that the share of spending going to those in their last year of life has not changed substantially in the past 30 years, despite many changes in medical care delivery. The authors conclude that factors influencing Medicare spending growth appear to affect care of decedents and survivors similarly, and that cost containment efforts should focus on broad aspects of patient care that affect both groups. The second paper explores the role of treatment intensity and concludes that treatment intensity both on the extensive (number

treated) and intensive (intensity among the treated) margin have contributed to Medicare spending growth in the past 20 years. The third paper explores the role of insurance status prior to age 65 and finds that spending is relatively high among some previously uninsured beneficiaries and that this appears to be partly related to continued reliance on emergency rooms and inpatient care after becoming insured at age 65. The fourth paper explores the relationship between Medicare payment rates and volume of services provided and concludes that volume is positively related to payment for most services examined, though elasticity varies across services. The final paper highlights both the role of new technology diffusion and financial factors such as payment rates on volume growth for ten services that have seen high growth since 2000.

▪ **Are Expenditures Higher for Those Entering Medicare at Age 65 Having Been Previously Uninsured?**

Sandra Decker, Ph.D.; Jalpa Doshi, Ph.D.; Amy Knaup, Ph.D.; Daniel Polsky, Ph.D.

Presented by: Sandra Decker, Ph.D., Senior Service Fellow, Division of Health Care Statistics, National Center for Health Statistics, 3311 Toledo Road, Hyattsville, MD 20782, **Phone:** (301) 458-4748, **Email:** sdecker@cdc.gov

Research Objective: We investigated whether and how much use of Medicare services beginning at age 65 is related to health insurance status prior to age 65.

Study Design: We examined the effect of insurance status before age 65 on Medicare expenditures and service use controlling for age, gender, race, and education. In some models, we also controlled for pre-65 health status, family income, and number of hospital stays. We analyzed Medicare expenditures and components of expenditures beginning at age 65 using a generalized linear model with a gamma distribution and log link. We analyzed counts of physician, outpatient, emergency room, and hospital visits using negative binomial models.

Population Studied: We used data on 5,410 privately insured or uninsured individuals before the age of 65 for 27,516 semi-annual periods of participation in the Medicare fee-for-service program beginning at age 65 from the 1994-1998 National Health Interview Survey conducted by the

National Center for Health Statistics linked to Medicare records for 1994-2000 from the Centers for Medicare and Medicaid Services. Some companion analyses controlling for supplemental insurance status beginning at age 65 were conducted using data on 3,185 individuals from the Health and Retirement Study (HRS) linked to Medicare records.

Principal Findings: Individuals who were uninsured prior to age 65 were statistically significantly less likely to have positive Medicare expenditures beginning at age 65, although among those with positive Medicare expenditures, expenditures were more than one-third higher among the previously uninsured compared to the previously insured. Compared to the previously insured, those with no insurance prior to age 65 had more emergency room and hospital outpatient department visits, though significantly fewer physician visits, especially specialist visits. Once on Medicare, the previously uninsured have more inpatient stays compared to others, especially stays that involve at least some days in an intensive or cardiac care unit or stays that were admitted from the emergency room. Preliminary analysis of data from HRS indicate that differences in the pattern of service use between the previously insured and uninsured are not entirely or mostly due to differences in the probability of having supplementary insurance beginning at age 65.

Conclusions: Individuals who are uninsured prior to age 65 are a heterogeneous group, with some exhibiting low expenditures beginning at age 65, and some exhibiting very high expenditures. As a group, however, individuals who were uninsured prior to age 65 continue to use the health care system differently from those who were privately insured, relying more on emergency room and hospital outpatient and inpatient visits and less on care in physician offices.

Implications for Policy, Delivery or Practice: Since the previously uninsured continue to exhibit relatively high use of emergency rooms and inpatient care and low use of physician care even after the age of Medicare eligibility has been reached, future research should analyze reasons for different patterns of use of Medicare services and the role of education in promoting the use of preventive care.

▪ Medicare Fees & the Volume of Physicians' Services

Jack Hadley, Ph.D.; James Reschovsky, Ph.D.; Catherine Corey, M.A.; Stephen Zuckerman, Ph.D.

Presented by: Jack Hadley, Ph.D., Professor, Department of Health Administration & Policy, George Mason University, 4400 University Drive, Fairfax, VA 22030, **Phone:** (703) 993-4548, **Email:** jhadley1@gmu.edu

Research Objective: To estimate whether the volumes of eight specific physician services (six types of visits, EKGs, and echocardiograms) respond positively or negatively to variations in Medicare Fees.

Study Design: Statistical estimation of an empirical model that follows a standard micro model of a firm that supplies services to two markets: a price-taking market (Medicare) and a monopolistically competitive market with downward sloping marginal and average revenue functions (private insurance). By focusing on specific services, we are able to construct an exogenous measure of the profitability of each service that varies geographically because of deviations between physicians' local practice costs and various geographic adjustments in the Medicare fee formula, and over time because of discrepancies between annual Medicare fee changes and actual increases in input prices. Since the profitability variable is exogenous by construction, the quantity models can be estimated by ordinary least squares.

Population Studied: The models are estimated with nationally representative data for 13,707 physicians who responded to the Community Tracking Study physician survey in 2001 or 2004/05 and were linked to Medicare claims for all Medicare patients they treated in 2001 or 2005. Radiologists, anesthesiologists, and pathologists are excluded because they were not included in the physician survey design.

Principal Findings: The results indicate that Medicare profit, and by extension Medicare fees, are significantly and positively related to quantity provided for six of the eight services. There is no significant relationship for the two types of consultations, which depend on referrals from other physicians. Moreover, the responses are statistically significant and elastic for five of the six services. The largest elasticities (1.9 and 3.1) are for the two

cardiac diagnostic services. We find no evidence of volume offset behavior.

Conclusions: Although limited to eight specific services, the results suggest that the volume response of physicians' services to Medicare fee changes would follow a standard economic model. Similar models should be estimated for other services to increase generalizability.

Implications for Policy, Delivery or Practice:

These results imply that Medicare could encourage or discourage volume growth for specific services by varying their fee changes. As a corollary, uniform national fee changes, as under the current SGR policy, will distort practice patterns by failing to recognize that fee elasticities vary across services. The sensitivity of volume to Medicare profitability also suggests that Medicare should invest greater resources to develop more accurate and timelier measures of services' costs.

Funding Source(s): RWJF

▪ **Volume Growth in Medicare: An Investigation of Ten Physicians' Services**

Teryl Nuckols, M.D.; Melinda Beeuwkes Buntin, Ph.D.; Stephen Zuckerman, Ph.D.; Robert Berenson, M.D.; Anant Patel, B.A.

Presented by: Teryl Nuckols, M.D., Affiliate Adjunct Staff, Rand Corporation, P.O. Box 2138, Santa Monica, CA 90407, **Phone:** (310) 393-0411, **Email:** nuckols@rand.org

Research Objective: To examine the underlying causes of growth in ten medical services that saw significant increases in utilization and associated spending among Medicare beneficiaries between 2000 and 2006.

Study Design: We used data from the Physician/Supplier Procedure Summary files for 2000 and 2006 to identify services for which Medicare expenditures were increasing rapidly and for which significant sums were spent by Medicare. We sought to represent a variety of clinical areas covering a range of diseases and conditions – particularly those with substantial morbidity or mortality. To examine the factors leading to the increased use of these physician services, we (1) selected and interviewed relevant clinical experts; (2) reviewed sources of information on changes in the clinical indication for the services; and (3)

conducted supplemental searches to corroborate reasons for growth suggested by our clinical experts.

Population Studied: The ten services we studied were cardiac stress testing, cardiac defibrillator implantation, CT/MRIs of the brain, CT/MRIs of the lumbar/spine, medical therapy for macular degeneration, electrodiagnostic testing, Mohs surgery for skin cancer, polysomnography for sleep apnea, procedures for benign prostatic hyperplasia, and spinal injections.

Principal Findings: Clinical factors, service diffusion, and financial factors drove growth to varying degrees across the ten services. Clinical factors and patient demand were factors for eight of the services we studied, but were major factors for only three. New technologies and new scientific evidence stimulated the growth of two services and patient demand drove six. A change in the size of the potentially eligible population was not a major factor for any of the services. In contrast, financial factors or increased uptake by providers were factors for all ten services and were major factors for seven.

Among major financial factors, Medicare coverage decisions influenced two services and reimbursement rates influenced two others.

Conclusions: We find that the diffusion of new technology and financial factors play important roles in increasing expenditures for physicians' services – even in the absence of any new clinical evidence or epidemiologic trends. In addition, there is no consensus about the appropriate use of most services and procedures, leaving room for other factors to influence care patterns.

Implications for Policy, Delivery or Practice:

Cutting or increasing the payment for all services uniformly, as the Sustainable Growth Rate policy does, is not producing greater efficiency. In addition, we cannot rely on existing clinical guidelines to determine what types of volume growth are appropriate. Instead, Medicare should consider an annual review of rapidly growing services that could identify potentially overvalued procedures and new services that may have limited clinical benefits.

Funding Source(s): ASPE

▪ **Long Term Trends in Medicare Payments in the Last Year of Life**

Gerald Riley, M.S.P.H.; James Lubitz, M.P.H.

Presented by: Gerald Riley, M.S.P.H., Office of Research, Development, & Information, Centers for Medicare & Medicaid Services, Baltimore, MD,
Phone: (410) 786-6699, **Email:** griley@cms.hhs.gov

Research Objective: To update previous research on the cost of Medicare services in the last year of life and identify long term trends.

Study Design: The study is based on the Continuous Medicare History Sample, which contains annual claims and enrollment data for a 30 year period for a five percent sample of Medicare beneficiaries.

Analyses were restricted to beneficiaries aged 65 or over in fee-for-service (FFS). For any given year t , Medicare payments were assigned to decedent or survivor categories. For individuals dying in year $t+1$, payments in year t were prorated according to the proportion of year t that occurred in the last 12 months of life.

Population Studied: A five percent sample of aged Medicare beneficiaries entitled at any time during the period 1978-2006. Only years spent in FFS were included in the study.

Principal Findings: Preliminary findings show the percent of Medicare payments going to persons in their last year of life declined from 28.3 percent in 1978 to 25.1 percent in 2006. There was a one time drop in 1984, corresponding to the introduction of prospective payment for hospitals, and a slight downward trend between 2001 and 2006. After adjustment for age, sex, and death rates, there was no significant trend from 1978 to 2006. Among decedents, payments per person-year were significantly lower at higher ages at death, throughout the study period. The mix of services changed over time for both decedents and survivors, with hospice care accounting for almost 10 percent of decedent payments by 2006. There was mixed evidence on trends in aggressiveness of care at the end of life -- use of intensive care units (ICUs) increased, suggesting more aggressive care, but use of hospice also increased, suggesting greater emphasis on palliation and supportive services.

Conclusions: Despite many changes in the delivery of medical care over the last generation, the share of Medicare expenditures going to beneficiaries in their last year of life has not changed substantially.

Implications for Policy, Delivery or Practice: The last 30 years have seen the initiation of the hospice benefit, gains in life expectancy, and an increasing

shift in geriatric care toward the long-term management of chronic conditions, yet the role of end of life care in the Medicare program has remained relatively constant. Factors influencing the growth of Medicare expenditures appear to affect care of decedents and survivors in a similar way. These findings suggest that cost containment efforts should not focus on end of life care explicitly, but rather on broader aspects of patient care affecting all chronically ill patients.

▪ **Treatment Intensity & Health Care Spending Growth among the Elderly**

Baoping Shang, Ph.D.; Melinda Beeuwkes Buntin, Ph.D.; Dana Goldman, Ph.D.

Presented by: Baoping Shang, Ph.D., Research Associate, Health Policy Center, The Urban Institute, 2100 M. Street, Northwest, Washington, DC 20037, **Phone:** (202) 833-7200, **Email:** bshang@urban.org

Research Objective: Health care spending has been growing rapidly and the Centers for Medicare and Medicaid Services (CMS) projects that growth in health care spending will continue to outpace GDP growth over the next decade. However, a large share of the growth cannot be explained by changes in demographics, health insurance coverage, or population health. In this study, we examine the contribution of various factors to health care spending growth in the elderly population, treatment intensity in particular.

Study Design: We use per capita Relative Value Units (RVUs) as a measure of treatment intensity. Linear regression models are used to estimate the effect of treatment intensity on health care spending growth. Although we considered alternative models, including those with a log transformed dependent variable to address skewness in the data, statistical tests supported our choice of the ordinary least squares model. Three potential sources of the increase in per capita RVUs include: (1) more beneficiaries getting treated with each condition; (2) each condition getting treated more intensively; and (3) the adoption of new medical technologies. We decompose the total increase into these components and identify the top twenty-five treatments which contributed the most to per capita RVU growth during the study period.

Population Studied: The primary data sources include the Medicare Current Beneficiary Survey (MCBS), Medicare claims data for MCBS participants, and a longitudinal database from the American Medication Association (AMA) which contains the RVUs for each service code, by year. Our nationally representative sample consists of community-based, FFS elderly Medicare beneficiaries from 1993 to 2003.

Principal Findings: Demographics, health insurance and health status explained at most 17% of the spending growth; increase in the number of treated conditions explained another 52% of health spending growth, and increase in treatment intensity per treated condition explained at least 24% of spending growth. Nearly 30% of the increase in per capita RVUs from 1993 to 2003 was due to new physicians' services. For services existing in 1993, 77% of the increase was due to an increase in the percentage of beneficiaries treated with each condition, 17% was due to number of treatments per treated condition and the remaining 6% was due to a RVU value update. The top twenty- five treatments accounted for nearly 50% of the increase in per capita RVUs from 1993 to 2003.

Conclusions: Treatment intensity is an important source of health care spending growth. Not only are more beneficiaries treated with each condition over the period examined, but also each disease is treated more intensively. A limited number of treatments account for a large portion of the increase in treatment intensity.

Implications for Policy, Delivery or Practice: This study provides a better understanding of the sources of health care spending growth, and the findings can inform targeted policy designs to improve the efficiency of health care delivery and to control health care spending growth in the Medicare population.

Funding Source(s): NIA

Call for Panels

*Hospital Quality from the Patient Perspective:
Results from Year Two of the HCAHPS Survey*

Marc Elliott, Ph.D.

*Monda, June 29 * 4:45 P.M.-6:15 P.M.*

Panel Overview: This panel presents results from the second year of national implementation of the HCAHPS Survey, the first national, standardized, publicly reported survey of patients' perspectives of hospital care. The first two of four papers use data from 2.2 million inpatients with stays July 2007-June 2008 in any of ~3,900 participating hospitals (~90% of eligible hospitals- considerably broader participation than in the first public reporting). The first paper summarizes Year 2 HCAHPS findings, examining variation by hospital characteristics in multivariate analyses, comparing these patterns to those from initial public reporting. The second paper merges data on clinical process measures with HCAHPS data and examines the extent to which the experiences of patient subgroups (e.g. surgical patients, patients in poorer overall health) are predictive of clinical process measures of quality and further examines which hospital characteristics are predictive of superior performance in both dimensions and each alone. The third paper measures racial/ethnic disparities in inpatient experience, considering the roles of between- and within-hospital factors and the possible role of patient expectations in observed racial/ethnic differences. The final paper reports results from a randomized experiment intended to inform CMS' consideration of two additional candidate survey modes for HCAHPS administration—a Web-based mode (with an optional respondent-initiated mail alternative) and speech-enabled interactive voice recognition with an option to switch to telephone. The session will conclude with remarks from a discussant with extensive experience in helping hospitals use HCAHPS to improve quality.

▪ Findings from the Second HCAHPS Mode Experiment

Marc Elliott, Ph.D.; Julie Brown, B.A.; Elizabeth Goldstein, Ph.D.; William Lehrman, Ph.D.; Katrin Hambarsoomian, M.S.; Laura Giordano, R.N., M.B.A.

Presented by: Marc Elliott, Ph.D., Senior Statistician, Economics & Statistics, RAND Corporation, 1776 Main Street, Santa Monica, CA 90407, **Phone:** (310) 393-0411, **Email:** elliott@rand.org

Research Objective: To determine the effects of mode of survey administration on patient responses

to the CAHPS Hospital Survey (HCAHPS) and evaluate the feasibility of two new candidate modes.

Study Design: The HCAHPS Survey currently permits participating hospitals to choose among four modes of data collection: mail only, telephone only, mail with telephone follow-up (mixed mode), and active touch-tone (TT) interactive voice response (IVR). In 2005, we conducted a randomized experiment in which discharged patients from 45 hospitals were randomized to each of these four survey modes. Because a hospital's choice of vendor or survey mode may be confounded with factors related to underlying quality, an external mode experiment was necessary to estimate mode adjustments for subsequent fielding of the survey. Response rates ranged from 42% for mixed mode to 21% for TT-IVR. Patients randomized to the telephone and active IVR modes provided more positive evaluations than those in mail and mixed modes ($p < 0.005$ for each vs. mail; $p = 0.26$ for mixed vs. mail), with some effects equivalent to more than 30 percentile points in hospital rankings. In 2008, we conducted a second mode experiment to compare two candidate modes -- Web-based (with a respondent-initiated mail option), and speech-enabled IVR (SE-IVR, with an option to switch to telephone) -- to the mail only mode. Within each of 29 hospitals, a total of 26,233 patients were randomized to these three modes.

Population Studied: English-speaking adult patients with a non-psychiatric primary diagnosis discharged alive after an overnight stay or longer at a general acute care hospital.

Principal Findings: Response rates were similar for SE-IVR (33%) and mail only (32%), but much lower for the Web-based mode (12%). One-fourth of SE-IVR completes in the SE-IVR arm were entirely by SE-IVR. More than half of Web-based mode completes were by mail. Ongoing analyses assess both the consistency of these patterns across hospitals and how survey mode determines which patients complete surveys. In ongoing analyses, we estimate mode effects in linear models that predict each of 10 publicly reported HCAHPS outcomes (2 global ratings, 6 composites constructed from 14 report items, and 2 individual items) from mode fixed effects, hospital fixed effects, and patient-mix adjusters. We investigate the extent to which these mode effects are a function of who responds versus how they respond. Hierarchical models assess the

extent to which survey mode effects on responses and response rates are consistent across hospitals.

Conclusions: SE-IVR yields response rates that are comparable to those achieved by the four approved modes, whereas Web-based mode results in a response rate lower than any currently approved mode. Both candidate modes rely heavily on the option of switching to an alternate mode (telephone or mail) to achieve these response rates. Ongoing analyses may suggest that the Web-based mode in its current form does not promote reliable measurement to the same extent as approved modes.

Implications for Policy, Delivery or Practice: If CMS approves either or both of the candidate modes, mode adjustments derived from this experiment, in combination with patient-mix adjustments, will be used to ensure valid comparisons of hospital performance.

▪ **Evaluation of Hospital Care from the Patients' Perspective: Results from Year Two of the HCAHPS Survey**

Laura Giordano, R.N., M.B.A.; Marc Elliott, Ph.D.; William Lehrman, Ph.D.; Elizabeth Goldstein, Ph.D.

Presented by: Laura Giordano, R.N., M.B.A., Vice President of Surveys, Research, & Analysis, & Project Director of the Hospital Consumer Assessment of Healthcare Provider & Systems, Surveys, Research & Analysis, Health Services Advisory Group, 1600 East Northern Avenue, Suite #100, Phoenix, AZ 85020, **Phone:** (602) 665-6158, **Email:** LGiordano@hsag.com

Research Objective: This presentation summarizes findings from the HCAHPS Survey one year after the advent of public reporting. We also describe multivariate analyses that consider region, urbanicity, bed size, ownership, patient composition, and other factors related to patients' perspective of hospital care.

Study Design: The first publicly reported HCAHPS results in March 2008 were based on 1.2 million inpatients in medical, surgical, or maternity service lines with stays from October 2006 to June 2007 in 2,665 participating hospitals (~ 60% of eligible hospitals). Hospital participation has since increased dramatically. Here we examine HCAHPS results reported in March 2009, which are based on inpatient stays July 2007 to June 2008. We examine the 10 measures from the HCAHPS survey reported

on www.hospitalcompare.hhs.gov, which include 6 multi-item composites, 2 stand-alone report items, and 2 overall ratings. Results are adjusted for survey mode and patient mix in linear models. Multivariate models compare findings by hospital characteristics. The first series of multivariate models includes the hospital-level factors described above; a second series also includes an indicator of participation in initial HCAHPS public reporting to compare initial participants to more recent participants; a third series adds interactions of initial participation with other hospital characteristics to these models. All analyses are cross-sectional, using the most recently available HCAHPS data.

Population Studied: Data from 2.2 million adult inpatients with an overnight stay or longer, July 2007 to June 2008, at ~ 3,900 acute care or critical access hospitals (~ 90% of eligible hospitals).

Principal Findings: Analysis of hospitals participating in the initial public reporting found substantial variation in scores across measures (highest for doctor and nurse communication; lowest for communication about medicines, quietness, and discharge information), substantial regional variation, and notable differences by bed size (highest < 100 beds), urbanicity (higher for rural), and ownership (highest for government, followed by private non-profit, then for-profit). Since the initial public reporting, participation has increased especially among those hospitals somewhat less likely to participate initially: small, rural, and government-owned hospitals. Ongoing analyses examine the extent to which earlier patterns continue to hold as experience with HCAHPS increases and participation broadens. We also examine the role of additional hospital-level factors.

Conclusions: Given that performance in the initial public reporting was highest for categories of hospitals that were less likely to participate, initial patterns of results by hospital type may have in part reflected stronger self-selection, or “creaming,” within those hospital types. Longer experience with, and broader participation in, HCAHPS may result in a leveling of differences, where the advantages of hospitals and regions with more HCAHPS and other patient survey experience may diminish. Similarly, measures identified as lagging nationally may show less of a gap due to targeted quality improvement efforts, perhaps especially for initial HCAHPS participants. Analyses now in progress will help distinguish among these possibilities.

Implications for Policy, Delivery or Practice: HCAHPS results presented describe the current state of national hospital performance and better describe variation by hospital characteristics. We focus on opportunities for additional quality improvement two years into public reporting, and discuss the role and impact of HCAHPS reporting more broadly.
Funding Source(s): CMS

▪ **Racial/Ethnic Disparities in Inpatient Experience: National Results from the HCAHPS Survey**

Elizabeth Goldstein, Ph.D.; Marc Elliott, Ph.D.; William Lehrman, Ph.D.; Katrin Hambarsoomian, M.S.; Laura Giordano, R.N., M.B.A.

Presented by: Elizabeth Goldstein, Ph.D., Director, Division of Consumer Assessment & Plan Performance, Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Baltimore, MD 21244, **Phone:** (410) 786-6665, **Email:** Elizabeth.Goldstein@cms.hhs.gov

Research Objective: We compare the experiences of Hispanic, Black, Asian/Pacific Islander, American Indian/Alaska Native, and multiracial inpatients to those of non-Hispanic White (NHW) inpatients using the HCAHPS Survey to understand the role of between- and within- hospital differences and the possible role of patient expectations in racial/ethnic differences observed in patients' perspectives of hospital care.

Study Design: The data analyzed comes from 2,684 hospitals that have been collecting HCAHPS data since October 2006. Multivariate models compare six multi-item composites (communication with nurses, communication with doctors, responsiveness of hospital staff, pain management, communication about medicines, and discharge information) and two stand-alone report items (cleanliness and quietness of the hospital environment) by race/ethnicity, controlling for patient-mix and survey mode. A second set of models adds hospital fixed effects to identify within-hospital disparities. Additional models seek to control for the role of patient expectations.

Population Studied: The analysis includes 2,684 acute and critical access hospitals (~ 60% of all eligible hospitals), of which ~ 30% are located in rural areas; 86% have fewer than 400 beds, with 31% having fewer than 100 beds; 68% are nonprofit,

15% government controlled, and the remaining for-profit. The 1,202,988 patients included are 18 or older, with an inpatient stay of one night or longer in one of three service lines: medical (50%), surgical (32%) and maternity care (18%); approximately 38% were admitted through an emergency room.

Principal Findings: We find that non-Hispanic Whites report better experiences than all other racial/ethnic groups on Staff Responsiveness and Discharge Information; NHW also report better experiences with Nurse Communication than all groups other than Blacks. Asians report less positive experiences than NHW on all measures, with the largest disparities for Staff Responsiveness, Nurse Communication, and Pain Management. Hospitals with larger proportions of Blacks, Hispanics, and Asian inpatients provide less positive experiences to all patients on all six composite measures than hospitals with predominantly NHW inpatients. We find evidence that minority inpatients, especially Blacks, may rate similar care more positively than NHW inpatients, perhaps because of differences in expectations for, or previous experiences with, hospital care.

Conclusions: First, on average, NHW inpatients receive care at hospitals that provide better experiences for all patients than the hospitals more often used by Black, Hispanic, and Asian patients. Second, within hospitals, patient experiences are more similar by race/ethnicity, though some disparities do exist, especially for Asians.

Implications for Policy, Delivery or Practice: While a primary goal of the HCAHPS initiative is to motivate quality improvement in all hospitals, this research suggests that targeting improvements in the experiences of all patients at hospitals that serve predominantly minority patients, and/or improving the access of minority patients to better hospitals, may be the most promising means of reducing racial/ethnic disparities. In particular, an emphasis on better staff responsiveness, discharge information, and nurse communication may be especially useful. In addition, certain within-hospital interventions, particularly those targeting the experiences of Asian/Pacific Islander inpatients, perhaps through translators and improved cultural competence, are likely to further reduce disparities. Staff responsiveness, nurse communication, and pain management could receive special emphasis here.

Funding Source(s): CMS

▪ **Examining Hospital Quality in Two Dimensions: Characteristics of Hospitals Demonstrating Superior Performance in Patient Experience & Clinical Process Measures of Care**
William Lehrman, Ph.D.; Marc Elliott, Ph.D.; Elizabeth Goldstein, Ph.D.; Laura Giordano, R.N., M.B.A.

Presented by: William Lehrman, Ph.D., Government Task Leader, Hospital Consumer Assessment of Healthcare Provider & Systems Survey, Division of Beneficiary Analysis, Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Baltimore, MD 21244, **Phone:** (410) 786-1037, **Email:** William.Lehrman@cms.hhs.gov

Research Objective: We investigate hospital-level predictors of superior performance in two distinct dimensions of quality: patient experience, as measured by the HCAHPS Survey; and clinical care, as measured by the HCAHPS clinical process measures (CPM). This research extends previous empirical work using the broadest set of hospitals and the most recent publicly reported data.

Study Design: We use HCAHPS survey responses as well as CPM taken from the Hospital Compare website. Each publicly reported clinical process measure is converted to a percentile score, which are averaged to produce a single CPM summary score. After adjustments for patient-mix and survey mode, each of 10 publicly reported HCAHPS outcomes is similarly converted to a percentile score and averaged to summarize patient experience. Each hospital is classified on the basis of the HCAHPS and CPM summary scores: (1) top quartile on both, (2) top quartile on HCAHPS only, (3) top quartile on clinical process only, and (4) top quartile on neither. Multinomial logistic regression is then used to predict hospital performance classification from a variety of hospital-level characteristics. A previous analysis (based on 1.2 million HCAHPS patients from 2,665 hospitals in 2006-07) found small positive associations between HCAHPS and CPM at the hospital level. Here we examine whether the experience of some subgroups (defined by health, race/ethnicity, and service line) is particularly predictive of overall CPM at the hospital level, and further explore the association of hospital size, structure, process, staffing, and market with superior performance on either or both dimension of quality. Previous analysis also found that HCAHPS

performance was negatively associated with membership in a popular list of best hospitals that did not incorporate HCAHPS scores. Ongoing analyses examine the association of HCAHPS and CPM with a variety of such lists.

Population Studied: HCAHPS data are from 2.2 million adult inpatients with an overnight stay, July 2007-June 2008, in ~ 3900 participating acute care or critical access hospitals (~ 90% of eligible hospitals); clinical measures are for the same hospitals.

Principal Findings: Previous analysis found that top performers on both quality dimensions tended to be non-profit, small (< 100 beds) or large and rural (> 200 beds), and located in New England or the northern Midwest. Ongoing analysis examines these patterns as participation broadened and hospitals gained HCAHPS experience, and consider the role of new hospital-level predictors.

Conclusions: Patient experience and clinical process constitute distinct dimensions of hospital quality that are only slightly positively correlated. Ongoing analysis explores whether HCAHPS performance for less healthy, more vulnerable patients or particular service lines is more strongly correlated with clinical process measures, and whether an expanded set of hospital characteristics predict excellence in either or both dimensions.

Implications for Policy, Delivery or Practice: CMS is exploring means of combining HCAHPS and clinical measures to incentivize hospital performance in a proposed Value-Based Purchasing (pay-for-performance) initiative. Hospitals that excel on both dimensions could serve as effective best-practice models for overall hospital performance.

Funding Source(s): CMS

Call for Panels

Medicare Private Plans: Whose Advantage?

Stuart Guterman, M.A.

*Sunday, June 28 * 4:30 P.M.-6:00 P.M.*

Panel Overview: Over the past year, there has been increased attention to the Medicare Advantage (MA) program, highlighted by President Obama's comments that reductions in extra payments to MA

plans could be a major source of Federal health care savings. This national focus on MA plans follows the increase in the role of private plans in Medicare since the Medicare Modernization Act (MMA) of 2003, which substantially increased payments to plans and provided new flexibility in their organization and operation. Since 2003, the enrollment of beneficiaries in MA plans has increased from 6 to over 10 million. Over 20% of Medicare beneficiaries are now enrolled in MA plans. Reports from health services researchers on the costs and benefits of MA plans have played an important role in the understanding of the MA program. Analysis indicates that MA payment policies now pay plans 13% more – over \$900 per enrollee per year – than costs in traditional fee-for-service Medicare. Surveys and case studies have documented that plan marketing and other practices have misled and created health care problems for beneficiaries. The panel would present findings from new research on the current effects of MA private plans on beneficiaries and the Medicare program: 1. The first presentation would present trends in MA enrollment by plan type, including PFFS and SNP, and by geographic area; it would describe the effect of the expanded choice of plans on beneficiaries across the nation. 2. The second presentation would discuss analysis of patterns and trends in MA plan payments in 2009 with a focus on the policies that produce MA payments in excess of average fee-for-service costs; it would discuss policy options to reduce MA extra payments and their impact. 3. The third presentation would present findings of surveys of the effect of MA plan marketing practices, and of case studies on the effect of benefit design on beneficiary understanding and satisfaction with plans. Following the three presentations, two senior staff from Congressional committees and Congressional analytic offices would comment on the analysis of the current MA program. To conclude the session, the panel chair, an individual with extensive experience with Medicare policy analysis, would moderate a discussion on the implications of the research findings for future MA policy.

▪ Medicare Advantage Payments: Past, Present & Future

Brian Biles, M.D., M.P.H.

Presented by: Brian Biles, M.D., M.P.H., Professor, Department of Health Policy, George Washington University, 2021 K Street, Northwest, # 800, Washington, DC 20006, **Phone:** (202) 416-0066, **Email:** bbiles@gwu.edu

Research Objective: The Medicare Modernization Act of 2003 (MMA) included policies intended to expand the role of private plans in Medicare. These policies included significant increases in payments to Medicare Advantage (MA) private plans so that MA private plans are now paid substantially higher amounts than average costs in fee-for-service (FFS) Medicare. MA now pays private plans an average of 13% -- or over \$900 per enrollee per year -- more than average costs in FFS Medicare. With over 10 million Medicare beneficiaries now enrolled in private plans, the total additional costs to Medicare are \$9 b a year and more than \$150 b over 10 years. These additional costs to Medicare have caught the attention of national policy makers, included President Obama, who see reducing MA extra payments as a possible source of savings to support an expansion of health insurance coverage for the uninsured. The objective of this research is to understand the effect of specific policies responsible for extra payments to MA plans. The research also analyzes the savings and distributional impact of the major policy options now being discussed to reduce extra payments to MA plans.

Study Design: This study of extra payments to MA plans is based on calculations of the amount of payments to MA plans relative to average FFS costs for each of the 3,146 counties in the nation. This work now includes analysis of five years of data from 2005 through 2009. The research is based on comprehensive data on MA payments and enrollment. For 2009, MA payment rates and FFS expenditure averages are obtained from the CMS 2009 MA Rate Calculation Data spreadsheet. The number of MA enrollees by county is drawn from recent monthly 2009 CMS MA State County Penetration data files. Current payments to MA plans are projected to future years using projections of Medicare costs published by CBO in March of each year. The research analyzes patterns and trends in extra payments by state, by MA plan type, and by MA county payment policy. It also considers the implications of policy options, such as a blended phase out of extra payments and a simple reduction

in the annual MA payment update, under consideration for reductions in MA payments.

Population Studied: The analysis studies payments to MA private plans for the 10 million beneficiaries enrolled in MA plans. Costs for MA enrollees are compared to average costs for the 35 million beneficiaries in traditional FFS Medicare.

Principal Findings: In 2009, beneficiaries in MA plans cost Medicare an average of 13% more than they would have cost under traditional FFS Medicare. Total extra payments amount to \$9 billion in 2009 and are projected to exceed \$150 billion over the next ten years. The patterns in the amount of extra payments vary greatly -- ranging from 4% to over 30% -- by state, by MA plan type and by MA county payment type.

Conclusions: Extra payments to MA plans are the result of specific provisions of the MMA 2003. These extra payments benefit only the 10 of 43 million Medicare beneficiaries who are enrolled in MA plans. Phasing out MA extra payments could reduce projected Medicare spending by more than \$150 billion over ten years. A reduction in extra payments to plans will have a substantial impact in some areas of the nation and little in others.

Implications for Policy, Delivery or Practice: There is continuing interest in new federal programs to expand health insurance coverage, and President Obama and health leaders in the House and the Senate have proposed to eliminate extra payments to MA plans as a source of offsets for the expansion of coverage in future years.

Funding Source(s): CWF

▪ **Critical Issues for Medicare Advantage: Where Are We & How Did We Get Here?**
Marsha Gold, S.D.

Presented by: Marsha Gold, S.D., Senior Fellow, Mathematica Policy Research, 600 Maryland Avenue Southwest, Suite 550, Washington, DC 20024, **Phone:** (202) 484-4227, **Email:** MGold@Mathematica-MPR.com

Research Objective: With a new Administration and Congress focused on entitlements, a reconsideration of key features of Medicare Advantage seems inevitable. This presentation will review where the program stands today, how it got here, and what research indicates about its performance to support policymakers in making decisions going forward.

Study Design: This mixed mode embeds historical and policy analysis with descriptive analytical techniques we apply to time series data created from available public data on the Medicare Advantage program over time. We identify key changes in plan availability, enrollment and benefits by plan type in historical and research context.

Population Studied: This is a nationwide analysis of Medicare Advantage plans, including HMOs, local and regional PPOs, PFFS plans and MSAs. We emphasize what the data show about key policy questions.

Principal Findings: Reversing previous declines, the MMA expand MA options and enrollment. At year end 2008, 12.3 million Medicare beneficiaries were enrolled in Medicare Advantage and similar plans, including 1.8 million group enrollees and 1.3 million in SNPs. Our analysis shows MA to have expanded plan choice substantially but enrollment growth has been heavily dependent on market response to incentives leading to rapid growth of PFFS and on SNPs, some under unique circumstances not replicable in the future. MA has increased Medicare costs and added to complexity with little evidence of improved quality of care.

Conclusions: Policymakers may have a limited window of opportunity to influence the shape of MA going forward. While MIPPA may already modify future trends, there are many issues still outstanding, the most notable being how much to pay for choice.

Implications for Policy, Delivery or Practice: With limited resources, policymakers would be wise to well served by a system that encouraged more oversight and accountability for outcomes on a more transparent and consistent basis across both traditional Medicare and Medicare Advantage options.

Funding Source(s): Kaiser Family Foundation, ASPE, AARP

▪ Medicare Advantage: Opportunities & Challenges for Beneficiaries

Patricia Neuman, S.D.; Juliette Cubanski, Ph.D.

Presented by: Patricia Neuman, S.D., Vice-President and Director, Medicare Policy Project, Medicare Policy Project, Kaiser Family Foundation, 1330 G Street, Northwest, Washington, DC 20005, **Phone:** (202) 347-5270, **Email:** Tneuman@kff.org

Research Objective: The recent and rapid increase in the number Medicare Advantage plans, and wide variations across plans, presents opportunities and challenges for beneficiaries. Lawmakers are increasingly interested in assessing how well private plans are meeting the needs of elderly and disabled enrollees, and expected to focus greater attention on consumer protections. This presentation will analyze emerging issues from the perspective of beneficiaries.

Study Design: This presentation includes findings from original research and previously published work, drawing on data from a variety of sources. Using the Medicare Current Beneficiary Survey, the study compares characteristics of beneficiaries enrolled in Medicare Advantage plans vs. traditional Medicare, and beneficiaries' understanding of the program over time. Using data from Medicare.gov and findings from recently published research, including one on Medicare private plan marketing practices, the presentation will review key issues that have important implications for beneficiaries, including marketing practices of Medicare insurers, variations in benefit design and cost-sharing, and quality of care.

Population Studied: Medicare beneficiaries, Medicare Advantage plans themselves, and ads placed by private Medicare plans during the three-month period leading up to the 2009 plan year.

Principal Findings: The characteristics of beneficiaries enrolled in Medicare Advantage plans differ from those in traditional Medicare, based on income, urban/rural status and other demographics. As the number of Medicare plans increased, the share of beneficiaries who say Medicare is easy to understand has declined. In an effort to gain market share, private insurers have been aggressively marketing their Medicare Advantage products, spending more on Medicare Advantage ads than for stand-alone drug plan ads. Beneficiaries say they often rely on information from insurers to make coverage decisions, yet marketing materials often have minimal, basic descriptive information to inform health plan choices. Plans vary widely, and in some instances have higher out-of-pocket costs than traditional Medicare.

Conclusions: The proliferation of private plans, with wide variation in benefits and restrictions, has important implications for beneficiaries' out-of-pocket costs and access to providers. The increasing complexity of Medicare health plan choices poses

challenges for beneficiaries, especially those with significant health needs and vulnerabilities, and limited knowledge of the program. Lawmakers have an opportunity to build on provisions enacted in MIPPA to simplify the program and strengthen consumer protections.

Implications for Policy, Delivery or Practice:

Changes to Medicare Advantage will be on the agenda for the new Administration. The findings indicate that beyond payment reductions are other issues and challenges facing beneficiaries that are likely to be on the agenda.

Funding Source(s): Kaiser Family Foundation

Call for Panels

Results from the Cancer Care Outcomes & Research Consortium (CanCORS)

Katherine Kahn, M.D.

Sunday, June 28 * 2:30 P.M.-4:00 P.M.

Panel Overview: The Cancer Care Outcomes Research and Surveillance (CanCORS) Consortium, funded by the National Cancer Institute and the Department of Veterans Affairs, is a national research study of the health care and outcomes of patients newly diagnosed with lung or colorectal cancer. The study examines care for a population-based cohort of more than 10,000 patients diagnosed with lung or colorectal cancer during 2003-2005 who were living in Northern California, Los Angeles County, North Carolina, Iowa, or Alabama, or who receive their care in one of 5 health maintenance organizations or in the Veterans Administration Health Care System. Data have been collected from multiple sources, including baseline patient surveys (in English, Spanish, and Chinese) conducted approximately 4 months after diagnosis from patients (or patients' surrogates), follow-up surveys conducted 12 months after diagnosis, medical record abstraction, surveys of physicians with key roles in the care of these patients, and surveys of caregivers of a sample of these cancer patients. The primary goals of CanCORS include determining how patient, provider and health system factors affect patterns of cancer care and how treatments received are associated with cancer outcomes in community populations. This panel will present results from

three analyses beginning with a presentation about the predictors and outcomes of patient self-report quality ratings. We then present analyses of patient report of key roles fulfilled and quality ratings for patients whose physician teams do or do not include a primary care physician. Finally, we present an analysis of stage IV lung cancer patients analyzing the prevalence and predictors of discussions between patient and provider of possible use of hospice care. We have selected three aspects of care relevant to many cancer patients. In each instance we have identified a mutable aspect of care that could be improved.

▪ Patients' Perspectives on the Quality of Care for Lung Cancer & Colorectal Cancer: Findings from the CanCORS Consortium

John Ayanian, M.D., M.P.P.; Alan Zaslavsky, Ph.D.; Neeraj Arora, Ph.D.; Jennifer Malin, M.D., Ph.D.; Patricia Ganz, M.D.; Michelle Van Ryn, Ph.D.

Presented by: John Ayanian, M.D., M.P.P., Professor of Medicine & Health Care Policy, Health Care Policy, Harvard Medical School, 180 Longwood, Boston, MA 02115, **Phone:** (617) 432-3455, **Email:** ayanian@hcp.med.harvard.edu

Research Objective: Patients' experiences are an important component of the quality of cancer care, but little is known about these experiences or their relation to subsequent health-related quality of life (HRQoL). We assessed patients' perspectives on the quality of their cancer care and its association with their subsequent HRQoL.

Study Design: Patients with lung or colorectal cancer rated the overall quality of their cancer care, their experiences in 3 domains (physician communication, nursing care, coordination of the care team), and their HRQoL related to physical functioning (SF-12 PCS), mental functioning (SF-12 MCS) and vitality (SF-36 vitality scale). Logistic regression was used to assess sociodemographic factors, clinical factors, and care experiences independently associated with excellent ratings of overall care at 4-7 months after diagnosis. Linear regression was used to assess predictors of changes in adjusted HRQoL at 12 months after diagnosis.

Population Studied: During 2003-2005, we identified patients newly diagnosed with lung or colorectal cancer in 5 regions (Los Angeles, Northern California, Alabama, Iowa, and North

Carolina), 5 integrated health-care delivery systems (in Michigan, Washington State, Oregon, Hawaii, and Massachusetts), and 10 VA hospitals. At 4-7 months after diagnosis, we conducted telephone interviews in English, Spanish, or Chinese with 4010 patients with lung cancer and 3354 patients with colorectal cancer (or their surrogates) who also consented to medical record review. The overall response rate and cooperation rate (for successfully contacted patients) were 47% and 62%, respectively. Follow-up interviews were conducted one year after diagnosis with 1350 and 2067 surviving patients with lung or colorectal cancer, respectively.

Principal Findings: Excellent cancer care was reported by 45% of patients with lung cancer and 54% of patients with colorectal cancer. After multivariable adjustment, excellent ratings of care were less common for each cancer among black patients, English-speaking Asian patients, Chinese-speaking patients, those reporting worse health status, and surrogates of deceased patients (all $P < 0.05$). About half of patients reported optimal experiences in the 3 specific domains of care. Excellent ratings of care were most strongly associated with patients' positive reports on coordination of the care team. Among patients who survived at least one year, those who previously reported excellent care had greater adjusted improvements in mental functioning with both cancers (each $P = 0.01$) and in vitality with colorectal cancer ($P = 0.001$), but not in physical functioning.

Conclusions: In this multi-regional study of two major cancers, half of patients rated their care as excellent. These ratings varied substantially by race, language, and health status, and were strongly associated with more effective coordination of the care team. Patients who reported excellent cancer care had greater subsequent improvement in mental functioning and vitality.

Implications for Policy, Delivery or Practice: Patients' reports of their experiences with cancer care complement evaluations of technical quality such as the appropriate use of treatments. To our knowledge this study is the first to find an association between patients' perceptions of the quality of cancer care and improved HRQoL following treatment. Efforts to enhance patients' experiences with cancer care, particularly coordination of care, may improve their health-related quality of life.

Funding Source(s): NCI

▪ **Discussions with Physicians about Hospice among Patients with Metastatic Lung Cancer**
Haiden Huskamp, Ph.D.; Nancy Keating, M.D., M.P.H.; Jennifer Malin, Ph.D.; Alan Zaslavsky, Ph.D.; Jane Weeks, M.D., M.S.

Presented by: Haiden Huskamp, Ph.D., Associate Professor, Department of Health Care Policy, Harvard Medical School, 180 Longwood, Boston, MA 02115, **Phone:** (617) 432-0838, **Email:** huskamp@hcp.med.harvard.edu

Research Objective: Many terminally ill patients enroll in hospice only in the final days before death or not at all. Discussing hospice with a provider could increase awareness of hospice and possibly result in earlier use. Our objective was to identify characteristics and preferences of patients with metastatic lung cancer who discussed hospice with a provider.

Study Design: Multi-regional study involving patient or surrogate interviews 4-7 months after diagnosis and medical record reviews. We estimated logistic regression models of the probability of discussing hospice with a doctor or other health care provider after diagnosis. The outcome variable was based on patient or surrogate report or medical record documentation of a hospice discussion before the interview.

Population Studied: 1541 patients diagnosed with metastatic lung cancer.

Principal Findings: Half (53%) of patients had discussed hospice with a provider. Patients who were black, Hispanic, non-English speaking, Medicaid beneficiaries, or had received chemotherapy were less likely to have discussed hospice (all $p = 0.05$). Only 47% of individuals who died within 2 months after the interview had discussed hospice, and rates were much lower among those who lived longer ($p < 0.001$). Patients who reported that they expected to live less than two years had much higher rates of hospice discussion than those expecting to live longer ($p = 0.001$). Patients reporting the most severe pain or dyspnea were no more likely to have discussed hospice than those reporting less severe or no symptoms (both $p > 0.50$). A minority (35%) of patients who reported discussing do-not-resuscitate (DNR) preferences with a doctor before the interview had also discussed hospice.

Conclusions: Patients diagnosed with metastatic lung cancer have incurable cancers with very poor prognosis and substantial palliative care needs at the end of life, thus they are particularly likely to benefit from hospice care. Nonetheless, our study found that only half of patients diagnosed with metastatic lung cancer had discussed hospice with a physician or other health care provider within approximately four to seven months of diagnosis. Patients who were close to death were somewhat more likely to discuss hospice, but most did not; patients with the most severe symptoms were no more likely to have had a discussion regarding hospice than those with less severe or no symptoms. These results suggest that physicians are not communicating effectively with many patients potentially likely to benefit from hospice.

Implications for Policy, Delivery or Practice: Improved communication by physicians may increase patients' awareness about hospice and might correct misunderstandings about their prognosis. Incorporating a needs assessment tool that systematically assesses patients' need for palliative care and hospice into routine practice could help to foster earlier communication with patients regarding hospice. Such tools or other interventions to improve communication regarding patients' prognosis and goals of care may promote greater use of hospice for appropriate patients. Also, expanding discussions about DNR preferences to include discussions of hospice may allow for more comprehensive end-of-life planning for patients and their families.

Funding Source(s): NCI

▪ Roles & Experiences of Cancer Patients With Versus Without Primary Care Physicians on the Provider Team

Katherine Kahn, M.D.; Paul Catalano, S.D.; Nancy Keating, M.D., M.P.H.; John Adams, Ph.D.; Mary Beth Landrum, Ph.D.; Robert Fletcher, M.D., M.S.

Presented by: Katherine Kahn, M.D., Professor, Medicine, David Geffen School of Medicine at University of California, Los Angeles, 911 Broxton, Los Angeles, CA 90095, **Phone:** (310) 794-2287, **Email:** kkahn@mednet.ucla.edu

Research Objective: Primary care physicians (PCPs) have been recognized as central in the screening, initial diagnosis, and surveillance of

patients with cancer. Less is known about the role of PCPs soon after a cancer diagnosis when oncologists and/or surgeons typically manage care. We assessed patients' reports of key roles fulfilled and the relationship between key role fulfillment and patient report of quality of care for patients with and without PCPs.

Study Design: Approximately four months after diagnosis, a population-based incident cohort of 2986 lung and 3610 colorectal cancer patients used self-report to indicate whether they have a PCP, duration of PCP relationship, and whether specified key roles were fulfilled. Logistic regression adjusting for demographics, site, health status, comorbidity, and treatment predicted patient report of having a PCP, and # of key roles fulfilled. Ordinary least squares regression tested the relationship between covariates, PCP, key role fulfillment and self report quality. Results were confirmed with an alternative model, based upon propensity score for PCP > 5 years duration. We present adjusted mean self-report quality scores after adjustment for roles fulfilled and significant interaction between role fulfillment and having a PCP.

Population Studied: The study cohort includes 6596 patients from five population-based sites, four integrated health-care delivery systems, and 10 VA sites.

Principal Findings: 89% patients reported a PCP, with 42% reporting a PCP > 5 years duration. Patients with PCP were more likely to have ≥ 1 (97% vs. 90%) and 3 of 3 (80% vs. 66%) key roles fulfilled ($p < .0001$). For specific key roles, 90-91% patients with a PCP reported individual key roles fulfilled; patients without a PCP reported having a symptom doctor (78%), most important doctor (81%), in charge doctor (78%). Patients > 55 years, female, married, with more comorbidity and better pre-diagnosis health status were significantly more likely, while Spanish-speaking patients, those with no insurance, and income < \$20,000 were significantly less likely to have a PCP > 5 years duration. After adjustment for covariates, patients with PCP > 5 years (but not those with shorter duration PCP) reported slightly higher self-report quality ratings (90 vs. 88, $p = .032$ for lung, $p = .072$ for CRC). Results were most striking for subset of lung cancer patients with no key roles fulfilled (86 vs. 77, $p = .019$).

Conclusions: Patients with PCP and PCP > 5 years differ from those without in demographics, insurance, comorbidity, and pre-diagnosis health status. Having a PCP at the time of a cancer diagnosis is associated with greater key role fulfillment. PCP > 5 years duration is minimally associated with better self-reported quality scores, and substantially better for the subset of lung cancer patient with no key roles fulfilled.

Implications for Policy, Delivery or Practice:

Inclusion of a PCP on the patient's care team is associated with more key role fulfillment, and somewhat with better patient's reports of the quality of their cancer experience. Strategies to align specialty and generalist skills in the setting of incident cancer may improve role fulfillment and efficiency of treatment, while alleviating the anticipated shortages of both PCPs and oncologists.

Funding Source(s): NCI

fees accrued to the mid-point of the pilot far exceed savings produced, a result substantially different from predicted savings rates by the MHSOs at the start of the pilot, and explores the role of regression-to-the-mean and non-participants in savings estimates for care management programs. The second paper presents results showing that there were positive intervention effects on selected process of care measures but no positive intervention effect on reduction in acute care utilization or mortality. The third paper presents results showing there was limited effect in improving beneficiary satisfaction, experience with care, and physical and mental health functioning. The fourth paper provides a synthesis of barriers to success based upon the analytic findings and qualitative information gathered from two rounds of site visits. We conclude with considerations for alternative models or designs of future chronic care improvement programs.

Call for Panels

Chronic Care Management In Medicare: Lessons from Medicare Health Support

Nancy McCall, Sc.D.

Monday, June 29 * 9:45 A.M.-11:15 A.M.

Panel Overview: The Medicare Health Support (MHS) Phase I Pilot Program is the largest randomized experiment in population-based care management and was designed to test the scalability of such programs in Medicare FFS. Eight MHS organizations (MHSOs) launched their programs between August 1, 2005 and January 16, 2006. Roughly 30,000 Medicare FFS beneficiaries with heart failure and/or diabetes were randomized into each of the programs (20,000 intervention group and 10,000 comparison group). The MHSOs received "at risk" monthly management fees for beneficiaries who agreed to participate; retention of fees were contingent upon achieving savings in Medicare expenditures and improvement in beneficiary satisfaction and quality of care.

This panel presents the results of the evaluation of the first 18-months of the pilot. Three papers will present the findings on cost, quality of care and health outcomes, and beneficiary experience with care. The first paper presents results showing that

▪ Effects of Medicare Health Support (MHS) on Beneficiary Functioning, Self-Management & Experience of Care

Shulamit Bernard, Ph.D.; Kevin Smith, M.S.; Nancy McCall, S.D.

Presented by: Shulamit Bernard, Ph.D., Duke University School of Nursing, 307 Trent Drive, Durham, NC 27710, **Phone:** (919) 684-9555, **Email:** shula.bernard@duke.edu

Research Objective: The purpose of this analysis was to evaluate the impact of the (MHS) program based on beneficiary self-reported physical and mental health functioning, self-management behaviors, satisfaction, and experience of care.

Study Design: Beneficiaries were randomly assigned to intervention and control groups within each MHS program in a 2:1 ratio. Mail surveys were sent to 800 beneficiaries in each group. The survey instrument contained multi-item scales measuring physical and mental function. Self-management was measured by the frequency with which respondents engaged in 8 health-enhancing behaviors. Experience of care was assessed in terms of services discussed, communication with the health care team, and a global rating of the extent to which the health care team helped the beneficiary to cope with chronic disease. A pre-post longitudinal survey design was employed with a baseline questionnaire administered at month 6 of each

program and a follow-up questionnaire one year later. Analysis of covariance was used to estimate MHS intervention effects, weighted for attrition and controlling for the baseline level of each outcome.

Population Studied: Medicare fee-for-service beneficiaries with threshold conditions of heart failure or diabetes and an HCC score >1.35.

Principal Findings: The response rate to the follow-up survey was 78%. None of the seven MHSOs demonstrated consistent positive intervention effects across the domains of satisfaction, care experience, self-management activities, and physical and mental health functioning. The interventions were most successful at providing services and discussions that beneficiaries considered to be helpful. Intervention members in 3 of the 7 programs reported significantly more helpful discussions of health care topics than beneficiaries in the control groups and two of these programs also had higher levels of communication with the teams. Ratings of how much a beneficiary had been helped to cope with a chronic condition were significantly higher in the intervention groups in two programs. But only 6 significant behavior effects were detected out of 56 tests. Physical and mental function declined slightly over the course of the follow-up year in all programs. Only two isolated intervention effects were found for the function outcomes, and neither was corroborated by related measures. The majority

Conclusions: Comparatively few significant intervention effects were found for the MHS programs across a variety of self-reported outcomes. The MHS emphasis on self-management may lead to more discussions of health care practices with beneficiaries, but this did not improve greatly improve self-management behavior in older adults and nor affect functional status. Although there was no pre-determined expected number of contacts, the majority of fully eligible and participating beneficiaries during the survey period received between 2 and 5 months of telephonic support. Given the lack of consistent monthly or bimonthly interaction with many of the MHS participants, it is not surprising to see limited changes in beneficiary behavior with respect to self-management of their chronic illness.

Implications for Policy, Delivery or Practice: Implications for Policy, Delivery or Practice are summarized across the three analytic findings presentations in the final presentation.

Funding Source(s): CMS

▪ Financial Performance in Medicare Health Support

Jerry Cromwell, Ph.D.

Presented by: Jerry Cromwell, Ph.D., Senior Fellow, Division for Health Services & Social Policy Research, RTI International, 701 13th Street Northwest, Suite 750, Washington, DC 20005,
Phone: (781) 434-1713, **Email:** jcromwell@rti.org

Research Objective: Despite substantial reported savings in private sector firms, the published research literature has been mixed on whether managing the chronically ill can save money. In evaluating CMS' Medicare Health Support program, our research objectives were to: 1) Estimate Medicare savings from chronic care improvement interventions in 8 organizations (MHSOs); 2) Determine financial success with particular diagnostic subgroups and with active participants in the intervention; 3) Quantify net savings on Medicare outlays accounting for monthly fees paid to managed care organizations; and 4) Determine the extent of regression-to-the-mean effects that result in overstatements of savings from a simple pre/post experimental design.

Study Design: The 3-year pilot study employed a randomized intent-to-treat experimental design with MHSOs at financial risk for all intervention beneficiaries. Gross savings on a rate-of-growth basis were calculated as the difference between average monthly (PBPM) expenditures in the intervention and control group. To keep all fees, MHSOs must achieve budget neutrality, or non-negative net savings.

Population Studied: Base year Medicare claims were used to identify beneficiaries with either Heart Failure or Diabetes and a Medicare HCC (severity) score > 1.35. Then, 20,000 beneficiaries were pre-randomized to the intervention arm in each of 8 geographic sites; 10,000 to the control group (240,000 overall).

Principal Findings: Through the pilot's first 18 months: None of the 8 MHSOs achieved gross savings rates that were statistically different from zero. Only 4-of-8 MHSOs achieved any positive gross savings, or 1-2% of per beneficiary per month (PBPM) outlays, relative to their comparison group; none of the savings were statistically significant; The lack of financial success was uniform across five broad disease groups (e.g., heart failure only, heart

failure and diabetes). Savings in only 1-in-40 diagnostic-MHSO subgroups were statistically significant; Evidence was found of engagement of less costly, healthier beneficiaries in the participant pool. No statistically significant savings were found among beneficiaries agreeing to participate in disease management relative to the entire comparison group; Monthly fees averaged 4.7%-9.3% of monthly Medicare outlays, resulting in 25% of fees being covered, at best, half-way through the pilot period; and Regression-to-the-Mean effects ranged between 35-40% in the first 18 months.

Conclusions: It is unlikely that the MHS interventions can achieve meaningful Medicare savings for the chronically ill within the MHS pilot program. At the mid-point of the pilot, there is no evidence that the MHSOs can accurately target beneficiaries most amenable to management of their utilization. Finally, observed regression-to-the-mean in the MHS pilot suggests that simple pre-post evaluations are likely to overstate savings.

Implications for Policy, Delivery or Practice: Implications for Policy, Delivery or Practice are summarized across the three analytic findings presentations in the final presentation.

Funding Source(s): CMS

▪ Quality of Care & Health Outcomes in the Medicare Health Support Pilot

Nancy McCall, Sc.D.

Presented by: Nancy McCall, Sc.D., Chief Scientist, Division for Health Services & Social Policy Research, RTI International, 701 13th Street Northwest, Suite 750, Washington, DC 20005, **Phone:** (202) 546-8910, **Email:** nmccall@rti.org

Research Objective: To examine changes in processes of care and health outcomes during the first 18-month period of the Medicare Health Support (MHS) 3-year pilot.

Study Design: The 3-year pilot study employed a randomized intent-to-treat experimental design with MHS Organizations (MHSOs) at financial risk for all intervention beneficiaries. We utilize a pre-post/intervention-control difference-in-differences analytic evaluation approach. Analyses are weighted to reflect the proportion of the pilot period that the beneficiary is eligible to participate.

Population Studied: Within each of 8 MHS programs, approximately 30,000 Medicare fee-for-

service (FFS) beneficiaries with heart failure and/or diabetes (20,000 intervention group and 10,000 comparison group) with an HCC score of > 1.35 were selected at the start of the pilot.

Principal Findings: Claims-based process of care measures appropriate for the threshold conditions of were selected (e.g., HbA1c, cholesterol screening) and most of the MHSOs developed campaigns around ensuring compliance with these measures. Across 40 quality of care measures (5 measures per MHSO), there was modest improvement in 16 (or 40%) measures for the original populations. Seven of the 8 MHSOs demonstrated at least one positive intervention effect. Rates of improvement in the quality of care measures were relatively modest; 2 to 4 percentage points. We observe high rates of acute care utilization during the year prior to randomization. Baseline rates of all-cause hospitalizations range from 83 to 116 per 100 beneficiaries. However, only a small fraction of the hospitalizations are for the principal reason of HF or diabetes; 15% or fewer are for HF and 5% or fewer are for diabetes. This reflects the myriad of chronic conditions present in the elderly and disabled populations along with unavoidable hospitalizations due to acute medical conditions. Across 120 comparisons for the original populations (15 measures for 8 MHSOs), there were no statistically significant reductions in the rate of growth in all-cause, heart failure, or diabetes hospitalizations, re-admissions, or ER visits in the intervention groups relative to the comparison groups.

Conclusions: MHS intervention strategies aimed at increasing the rate of adherence to process of care measures were modestly successful; yet, their strategies were ineffective at reducing acute care utilization. Given the limited gains regarding quality of care and savings to offset accrued management fees, it is difficult to justify these private management models on cost effectiveness grounds. CMS estimated that accrued management fees were \$250 million through the first 18 months of the pilot for the 160,000 original intervention beneficiaries. With 16 statistical successes out of 40 possible improvements in evidence-based process-of-care measures, the cost per successful improvement is approximately \$16 million or \$6.4 million per percentage point improvement.

Implications for Policy, Delivery or Practice: Implications for Policy, Delivery or Practice are

summarized across the three analytic findings presentations in the final presentation.

Funding Source(s): CMS

▪ **Lessons Learned from Medicare Health Support**

Nancy McCall, Sc.D.; Jerry Cromwell, Ph.D.; Shulamit Bernard, Ph.D.; Kevin Smith, M.S.; Mary Kapp, M.P.

Presented by: Nancy McCall, Sc.D., Chief Scientist, Division for Health Services & Social Policy Research, RTI International, 701 13th Street Northwest, Suite 750, Washington, DC 20005, **Phone:** (202) 728-1968, **Email:** nmccall@rti.org

Research Objective: To identify barriers to success of vendor-based, chronic care improvement programs in the Medicare fee-for-service (FFS) population and the implications of these findings for future Medicare initiatives.

Principal Findings: Obtaining Consent from the Intervention Population: Participation rates during the first 18-months of the Medicare Health Support (MHS) pilot ranged from 74% to 95%; however, the MHSOs did not engage the sicker, more costly, and higher acute care utilizing beneficiaries. Barriers to Success: High search costs to locate beneficiaries; and Challenges in identifying and engaging institutionalized beneficiaries

Enhancing Beneficiary Self-Management Behaviors: The beneficiary survey results showed little evidence of changes in self-efficacy or self-care. Barriers to Success: Nurses must build a relationship and conduct the intervention primarily telephonically; Primarily a frail elderly population with reported high levels of psychosocial needs and visual and hearing impairments; Lack of routine real-time clinical data reduced the MHSOs ability to have up-to-date assessments of patient health status for teaching purposes; and the lack of consistent monthly or bimonthly interaction with many of the MHS participants that is likely to be required to be successful at changing beneficiary behavior with respect to self-management of their chronic illness reflects the MHSOs stated targeting strategies – to focus more intently upon those beneficiaries that are at highest risk of an acute event. Improving Quality of Care and Health Outcomes: Rates of improvement in the quality of care measures were relatively modest. There were no statistically significant

reductions in the rate of growth in hospitalizations, re-admissions, or ER visits in the intervention groups relative to the comparison groups.

Barriers to Success: 1) In most instances there was no relationship between the primary care provider and the MHSO; 2) The MHSOs cannot provide the process-of-care services ensuring compliance but rather must rely upon beneficiary self-motivation and/or communication with providers about potential unmet needs, 3) A critical barrier to success in reducing ER visits and hospitalizations is lack of real-time clinical information on deterioration in health status and the ability to readily perform an in-person clinical assessment; and 4) A barrier to reducing readmissions is lack of timely knowledge of hospitalizations. Achieving Financial Savings: Fees accrued through the first 18-month pilot period far exceed savings produced. Barriers to Success: 1) Without a reduction in acute care utilization, there will not be significant reductions in Medicare expenditures; 2) Given the intent-to-treat design, lack of engagement of the most costly beneficiaries required a substantially larger savings effect on participants; and 3) Monthly management fees are too high for savings generated.

Implications for Policy, Delivery or Practice: Alternative models or designs of future chronic care improvement programs that focus broadly upon the Medicare FFS population should focus upon reducing observed barriers to success in the MHS pilot. Considerations include: 1) Changing the models to include greater involvement of physicians in the day-to-day care management may increase levels of active engagement in self-management as physicians have a more established relationship with beneficiaries, able to conduct in-person visits, and have better access to real-time clinical data; 2) Revising the eligibility criteria for selection into demonstration programs to eliminate those least likely to voluntarily participate or those for whom search costs are high, i.e., the institutionalized, Medicaid enrollees, etc., and those that present particular communication and interaction challenges, i.e., those with severe dementia, hearing impairments). Special niche programs are likely to be necessary for these special sub-populations; 3) Barriers to more timely data flow from providers, especially acute care providers, to care managers need to be addressed as interoperable electronic health records that span multiple care settings and capture the majority of patient care are far in the

distance for all but a few large health care delivery systems; and 4) Care management fees need to be set in light of findings to date.

Funding Source(s): CMS

Call for Panels

Real-Time Policy Analysis & Research Translation for the California State Legislature

Susan Philip, M.P.P.

*Tuesday, June 30 * 9:45 A.M.-11:15 A.M.*

Panel Overview: The California Health Benefits Review Program (CHBRP) was established in 2003 by law to enhance the evaluation of legislative proposals that would mandate health insurance to cover specific health care benefits. The Legislature intended that CHBRP produce systematic reviews to assist lawmakers “in determining whether mandating a particular coverage is in the public interest.” Based at the University of California, CHBRP represents a unique marriage of academic analysis and use of health services research with real-time legislative decision making. In response to legislative requests, CHBRP analyzes known medical effectiveness of potentially mandated services as well as the costs and public health impacts that would be associated with the mandate. The analysis is conducted by teams of faculty drawn from the University system who work under the constraints of the legislative calendar. The methods and lessons learned by CHBRP since its inception are particularly relevant as health services researchers and analysts consider ways to integrate studies on comparative effectiveness, cost effectiveness analysis, and benefit designs into health care reform proposals. This panel will be chaired by a member of CHBRP's National Advisory Council and include four panelists who will: Briefly provide an overview of CHBRP's genesis and function; With an emphasis on lessons learned, present the methods for assessing the medical effectiveness, and the cost and public health impacts of proposed legislation within timeframes that allow for real-time decision-making; and present how reports have been used by the Legislature and stakeholders and have influenced policy making.

■ How the California Health Benefits Review Program Assesses Medical Effectiveness

Janet Coffman, M.A., M.P.P., Ph.D.; Edward Yelin, Ph.D.; Wade Aubry, M.D.; Mi-Kyung Hong, M.P.H.

Presented by: Janet Coffman, M.A., M.P.P., Ph.D., Assistant Adjunct Professor, Philip R. Lee Institute for Health Policy Studies, University of California, San Francisco, 3333 California Street, Suite 265, San Francisco, CA 94118, **Phone:** (415) 476-2435, **Email:** Janet.Coffman@ucsf.edu

Research Objective: To describe the methods the California Health Benefits Review Program (CHBRP) uses to assess the medical effectiveness of health insurance benefit mandates introduced in the California Legislature.

Study Design: This presentation will discuss a rapid assessment model CHBRP has developed to complete systematic reviews of the medical literature pertinent to a proposed benefit mandate within 60 days, as required by CHBRP's authorizing legislation. Major elements of the model include: (1) consulting an expert on the disease or condition to which the proposed mandate would apply, (2) having a medical librarian conduct the literature search, (3) relying on existing meta-analyses and systematic reviews of randomized controlled trials where available, (4) assigning an overall “grade” to the evidence based on its internal and external validity and the magnitude and direction of effects on outcomes that are meaningful to consumers, (5) generating quantitative estimates of an intervention's effectiveness if sufficient data are available from rigorous studies. The relationship of the medical effectiveness review to CHBRP's cost and public health impact analyses will be discussed, as well as lessons learned from conducting medical effectiveness reviews for legislators.

Population Studied: Californians who have commercial health insurance, excluding individuals who receive coverage through self-insured firms, and publicly insured persons enrolled in health plans subject to state regulation.

Principal Findings: For 47% of the 47 bills on which CHBRP has issued reports, evidence from meta-analyses, systematic reviews, evidence-based guidelines, or randomized controlled trials indicates that the mandated services are medically effective. Findings from studies with weaker research designs suggest that services mandated in 28% of bills are

effective. For 17% of bills, no studies were found that assessed the effectiveness of mandated services. For one bill, there was evidence that the intervention would not be effective and for three bills the strength and direction of the evidence varied across the multiple services the bill addressed. CHBRP has encountered some important challenges in translating medical research findings for the California Legislature. These challenges stem from political dynamics, differences in academics' and legislators' levels of expertise in health services research, and the limitations of the medical literature. Although the number of studies of the effectiveness of health care services has grown dramatically in recent decades, evidence is still lacking for many services, especially treatments for rare diseases. Where evidence is available, it can be difficult to synthesize and may not address the outcomes of greatest concern to policymakers. Despite these limitations, California legislators and legislative staff have come to rely on CHBRP's assessments of the medical effectiveness of proposed mandates.

Conclusions: CHBRP has demonstrated that it is possible to produce credible and relevant systematic reviews of literature on the effectiveness of health care services within the tight time constraints of the legislative process.

Implications for Policy, Delivery or Practice: CHBRP's approach could easily be adapted for use by other states or by the federal government to assess the effectiveness of health care services or compare the effectiveness of treatment or disease prevention strategies.

Funding Source(s): Health Care Benefits Fund

▪ **Assessing the Financial Impacts of State Health Benefit Mandates: Evidence from the California Health Benefits Review Program**

Gerald Kominski, Ph.D.; Nadereh Pourat, Ph.D.; Susan Ettner, Ph.D.; Jay Ripps, F.S.A., M.A.A.A.; Robert Cosway, F.S.A., M.A.A.A.

Presented by: Gerald Kominski, Ph.D., Professor, School of Public Health; Department of Health Services, University of California, Los Angeles, 10960 Wilshire Boulevard, Suite 1550, Los Angeles, CA 90024, **Phone:** (310) 794-2681, **Email:** kominski@ucla.edu

Research Objective: To estimate the impact of proposed health benefits mandates introduced before the California Legislature on total health expenditures, including expenditures for both health insurance premiums and personal out-of-pocket expenditures, among insured individuals in the state. **Study Design:** Pre/post comparison of total health expenditures by type of insurance and by market segment. Type of insurance includes health plans regulated by the Knox-Keane Act (primarily managed care plans) versus non-managed care, and high-deductible plans versus low-deductible plans. Market segments includes large-group (firms with 51+ employees), small-group (firms with 2-50 employees), and individual markets. The major data sources used in CHBRP financial impact analyses are: utilization data from MEDSTAT, HCUP, and proprietary data from Milliman; premium data from the California Employer Health Benefits Survey; population data from the California Health Interview Survey; and ad hoc surveys of California's largest insurers to obtain data on the portion of their members, by type of insurance and market segment, who currently have coverage for the benefit subject to the proposed mandate.

Population Studied: California's commercially insured population and publically insured individuals enrolled in health plans subject to state regulation, excluding individuals working in firms that self-insure.

Principal Findings: Since the beginning of this project in 2003, most analyses of benefit mandates have yielded estimates of only a small incremental impact (<0.2%) on total health expenditures. Nevertheless, most proposed mandates have been vetoed by the Governor or failed to pass the Legislature, at least in part because of concerns about the contribution of proposed mandates to increased health care costs.

Conclusions: CHBRP has developed an effective methodology for rapid analysis of the financial impacts of proposed legislation. This information is widely viewed as useful to policy makers in the state. However, because costs are easier to quantify than health benefits, particularly long-term benefits, CHBRP analyses may unintentionally permit policy makers to give greater weight to cost impacts.

Implications for Policy, Delivery or Practice: Evidence-based decision making is valued by policy makers at the state level. Establishing a consistent methodology for evaluating proposed mandates

permits comparisons of findings across individual mandates.

Funding Source(s): Health Care Benefits Fund

▪ **The Role of Public Health in Evaluating State Health Benefit Mandates**

Sara McMenamin, Ph.D.; Helen Halpin, Sc.M., Ph.D.; Nicole Bellows, Ph.D.

Presented by: Sara McMenamin, Ph.D., Director of Research, Center for Health & Public Policy Studies, University of California, Berkeley, 50 University Hall, #7360, Berkeley, CA 94720, **Phone:** (510) 643-1675, **Email:** saram@berkeley.edu

Research Objective: To detail the process of assessing the public health impact of health insurance benefit mandates proposed in the California legislature as part of the CHBRP process and to discuss the successes and challenges in quantitatively estimating health impacts.

Study Design: This presentation details the methodology used to assess the public health impact of each mandate, including a discussion on data sources and analytic methods used to determine a mandate's impact on: overall public health, gender and racial disparities in health outcomes, premature death, and the societal cost of illness associated with the mandate. Impacts, as presented in the CHBRP analyses, are categorized in one of three ways: quantitative impact (measurable impact or no impact) and qualitative impact. This presentation uses this framework to discuss the results of the 43 public health impact assessments conducted since 2003.

Population Studied: The population of California that is subject to health insurance mandates, typically the commercially insured and publicly insured enrollees in plans subject to state health insurance mandates.

Principal Findings: Of the 43 public health impact analyses conducted since 2003, approximately 30% of the analyses generated a quantitative measurable estimate, detailing the expected health benefits gained due to the passage of a mandate. A larger proportion of the analyses (40%) found that a mandate would have no impact on health outcomes, most often due to the projection that a mandate would not result in increased utilization of a health service or treatment. In another 30%, the public health impact of a specific mandate was unknown

and therefore health benefits associated with the mandate were discussed qualitatively. Some of the major challenges to generating quantitative analyses include: unknown medical effectiveness of treatment/service, studies in the medical effectiveness literature present intermediate outcomes that do not map to tangible health outcomes, mandates encompass multiple health services and conditions, the current utilization of mandated benefit is unknown, and uncertainty of the market reaction to the mandate.

Conclusions: In a majority of the analyses, the public health impact methodology is successful in detailing whether or not a mandate will have a positive health impact, a negative health impact, or no health impact. For many mandates, however, a lack of data and existing research prevent the possibility of making accurate quantitative projections. In these instances, it is important to carefully consider what qualitative conclusions can be made to assist policymakers in their decision-making.

Implications for Policy, Delivery or Practice: The inclusion of a public health analysis in an evaluation of health insurance mandates is an important component to help guide decision-makers, which outweigh the challenges of generating quantitative health impact assessments.

Funding Source(s): Health Care Benefits Fund

▪ **The Impacts of the California Health Benefits Review Program on Legislative Decision-Making**

Susan Philip, M.P.P.; Cynthia Robinson, M.P.P.; John Lewis, M.P.A.

Presented by: Susan Philip, M.P.P., Director, California Health Benefits Review Program, University of California, Office of the President, 1111 Franklin Street, 11th Floor, Oakland, CA 94607, **Phone:** (510) 287-3877, **Email:** susan.philip@chbrp.org

Research Objective: To assess the impact of the California Health Benefits Review Program on policy debates and decision-making on legislative proposals for new health insurance benefit mandates and repeals of existing benefit mandates.

Study Design: Key informant stakeholder interviews (fall and winter, 2007-2008) and electronic survey (January-February, 2009). Review of products related to the deliberative process

including (1) legislative analysis produced by committee staff for the California Legislature's Health and Appropriation Committees' hearings (2) Votes, signing messages and veto messages associated with bills analyzed by CHBRP and (3) relevant testimony and discussions presented during hearings (2007-08).

Population Studied: Users of CHBRP reports including senior staff of the California Legislature's Health and Appropriations Committees; staffs of bill authors, regulatory agencies, and the Governor's office; and representatives from consumer groups, health insurance carriers and advocates.

Principal Findings: Review of products related to the deliberative process and a preliminary analysis of respondents' statements to interviews and electronic survey indicate the following trends in terms bill outcomes. The Governor's decisions regarding signage of benefit mandate bills are highly dependant on political realities, including the strength of advocacy communities and party affiliations of the bill author. However, bills mandating services that are estimated to have low costs, have potential for positive public health impact, and are considered medically effective are more likely to be passed by the Legislature. High cost estimates, especially during times of fiscal crisis, most negatively affect the passage of proposed legislation. Bills that mandate how services should be covered (e.g. affect the utilization management abilities of health plans' ability to manage utilization, affect the clinical guidelines that plans may use to determine coverage), bills for which there is ambiguous or conflicting evidence, and bills that mandate coverage for services associated with harmful or negative outcomes are also less likely to pass the Legislature. Preliminary analysis of respondents' statements unanimously indicate that the deliberative process of mandate bills rely on the CHBRP's analyses. CHBRP analyses are considered to be a reliable, impartial, and comprehensive source. The analyses raise the level of debate by allowing policy makers to start from a common understanding of the estimated impacts of the legislative proposal, allowing them to move beyond their traditional primary dependence on the testimony and information submitted by opponents and proponents of the bill. This allows deliberations to focus on questions of value: Is the proposed mandate worth the cost? Is it more important to preserve choice among health insurance products or

provide equitable coverage? Respondents indicate that time constraints are an obvious challenge to the legislative process and to the careful deliberation of legislative proposals. Thus translation efforts such as briefings and workshops are crucial to enhancing the understanding of CHBRP reports.

Conclusions: The heavy use of the CHBRP reports during the legislative process confirms policy makers' and their staff's desire to ensure that policies address real, as opposed to perceived, access to care issues and that policy-making is evidence-based.

Implications for Policy, Delivery or Practice: The CHBRP experience demonstrates that Legislators and their staff can and will use health services research to the extent that it is timely and customized to the policy options they are considering. Questions raised by policy makers indicate a need for further, more complex analyses that help weigh policy options in the long term (e.g. comparative effectiveness and cost-effectiveness analysis).

Funding Source(s): Health Care Benefits Fund

Call for Panels

The Medicare Physician Group Practice Demonstration

Gregory Pope, M.S

Monday, June 29 3:00 P.M.-4:30 P.M.*

Panel Overview: The Medicare Physician Group Practice (PGP) Demonstration is Medicare's first physician pay-for-performance initiative. The PGP Demonstration is now in its fourth year, with two complete data years available for evaluation. Ten large physician organizations are participating in the Demonstration, comprising over 5,000 physicians and 200,000 involved Medicare beneficiaries. The PGP's "shared savings" model creates incentives for physician groups to improve quality and efficiency. Shared savings incentive models have drawn the interest of a variety of stakeholders in the health care policy and industry arenas. The Senate Finance Committee "Baucus" white paper calls for expansion of the PGP Demonstration model into a Medicare pilot program for "accountable care organizations". The CBO Budget Options for Healthcare report includes a PGP Demonstration expansion option. A

shared savings component has also been incorporated into Medicare's Medical Home Demonstration. This panel will present and discuss the first two years results under the PGP Demonstration's shared savings model. The panel will consist of four presentations and a discussant. A CMS representative will introduce the panel and describe how demonstration results and input are helping to shape CMS's value based purchasing strategies. Demonstration financial and quality results to date will be summarized by the demonstration evaluators. A representative from one of the 10 participating physician groups will describe how care processes have been redesigned to improve quality and efficiency. The discussant will discuss the strengths and weaknesses of a shared savings model, and issues in generalizing the Demonstration.

▪ **The Medicare Physician Group Practice Demonstration: A Participating Provider Group's Perspective**

Marie Fallon

Presented by: Marie Fallon, Senior Medical Director, Physician Group Practice

Research Objective: To test the efficiencies of furnishing health care in a group-practice setting as compared to the efficiencies of furnishing health care in other health care delivery systems.

Study Design: PGP will describe their methodology used to target and develop care management interventions to support and be successful under the shared savings financial model.

Population Studied: Medicare FFS patients receiving care management services. Targeted patient populations included patients with chronic diseases, patients transition care settings, and patients requiring palliative care and near end of life.

Principal Findings: Senior Medical Director from one of the PGPs will present findings from their practice on how they redesigned care processes, invested in care management programs, and utilized health care information technology to improve the quality and efficiency of care for all patients including Medicare patients. The physician leader will highlight how initiatives put in place as a result of the shared savings financial incentives resulted in better care for Medicare patients, improved care processes, and more productive physician patient

encounters. The physician leader will also discuss the opportunities and challenges for physician groups participating in shared savings arrangements and resources and leadership required to participate successfully under these initiatives.

Conclusions: PGPs achieved outstanding levels of performance by having clinical champions (physicians or nurses who are in charge of quality reporting) at the practice, redesigning clinical care processes, and investing in health information technology. This allowed PGPs to more easily identify gaps in care, alert physicians to these gaps during patient visits, and provide interim feedback on performance. As a result, several PGPs experienced favorable financial performance in performance year 2 for patients with diabetes, coronary artery disease, and/or complex patients treated in the ambulatory and hospital settings.

Implications for Policy, Delivery or Practice:

Shared savings financial models can promote accountability in the health care system and provide incentives to redesign care processes, leading to better coordinated care that can improve quality and efficiency of health care delivery and result in better care for Medicare FFS patients.

Funding Source(s): CMS

▪ **Quality of Care Results from the Medicare Physician Group Practice Demonstration**

Musetta Leung, Ph.D.; Michael Trisolini, Ph.D., M.B.A.; Sherry Grund, R.N.; Gregory Pope, M.S.; John Kautter, Ph.D.

Presented by: Musetta Leung, Ph.D., Health Care Quality & Outcomes, RTI International, 1440 Main Street, Suite 310, Waltham, MA 02451, **Phone:** (781) 434-1730, **Email:** mleung@rti.org

Research Objective: To measure quality performance among participating physician groups in their care of Medicare beneficiaries.

Study Design: This Medicare value based purchasing initiative measures the quality and efficiency of care for ten large physician group practices (PGPs). The project uses both Medicare claims and clinical record data to measure 32 quality indicators in four disease topics (diabetes, heart failure, coronary artery disease and hypertension) and in preventive care. Quality indicators were developed by the Centers for Medicare & Medicaid Services in conjunction with the National Committee

for Quality Assurance and the American Medical Association. To date, baseline and second performance year results are available for the 10 diabetes (DM) measures, the 10 heart failure (HF) measures, and the 7 coronary artery disease (CAD) measures. Six of the 27 quality measures were calculated from claims with the option for the sites to improve their scores using clinical record data. Performance targets in the second performance year were based on 75% compliance, the 2004 mean Medicare HEDIS values reported by Medicare Advantage plans, the 70th percentile of the 2004 Medicare HEDIS level, or quality improvement targets set from baseline results.

Population Studied: Medicare fee-for-service beneficiaries assigned to the ten PGPs were included if they met quality measurement inclusion criteria of (1) having 2 or more evaluation and management visits to a physician's office, and (2) meeting criteria for each of the three disease topics. All beneficiaries with the relevant conditions were evaluated for the claims-based quality measures. A random sample of 615 beneficiaries was included for the clinical record based measures in each topic.

Principal Findings: The number of beneficiaries eligible for evaluation ranged from 527 to 5,868 depending on the PGP and the disease topic. Five of the PGPs achieved benchmark quality performance on all 27 quality measures, and all PGPs met all of their quality targets in the HF and CAD topics. Several DM quality measures targets, such as in blood pressure management, remained difficult to attain for a few sites, but the practices improved their quality scores in general. Compared to baseline results, the PGPs increased their quality scores an average of 9 percentage points across the DM measures, 11 percentage points across the HF measures, and 5 percentage points across the CAD measures. The PGPs' performance on claims based measures also remained favorable when compared with secular trends in their comparison groups.

Conclusions: Second performance year results for the PGP Demonstration showed marked improvement in the comprehensive approach to care for patients with chronic conditions over baseline. Improvement from baseline was attributed to various interventions, including practice redesign, improved care management, and enhanced information technology. However, several diabetes quality measures remain challenging for some sites.

Implications for Policy, Delivery or Practice:

Quality of care measurement and reporting allows physician practices to evaluate their patterns of care for patients with chronic conditions, improve care delivery, and track improvements over time. Paying for increased quality of care may provide additional resources or incentives for physician groups to implement interventions to improve care.

Funding Source(s): CMS

▪ **The Medicare Physician Group Practice Demonstration: Overview from C.M.S.**

John Pilotte, M.H.S.; Frederick Thomas, Ph.D.; Heather Grimsley, M.B.A.

Presented by: John Pilotte, M.H.S., Senior Research Analyst, CMS/ORDI/MDPG, Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Mail Stop C4-17-27, Baltimore, MD 21244, **Phone:** (410) 786-6558, **Email:** John.Pilotte@cms.hhs.gov

Research Objective: To test the efficiencies of furnishing health care in a group-practice setting as compared to the efficiencies of furnishing health care in other health care delivery systems.

Study Design: The Physician Group Practice (PGP) Demonstration retains the structure of the Medicare FFS system and retroactively "assigns" Medicare patients to the PGP site, if they received the plurality of their office or other outpatient evaluation and management (E&M) services at a PGP site during a year. Each PGP has a comparison group (CG) that is used to compute Target Expenditures using the CG risk adjusted expenditure growth rates within their local market. Target Expenditures are the per capita Base Year (BY) expenditures of the PGP multiplied by the growth rate of CG expenditures. Medicare retains 20% of any savings and the remaining 80% is shared with the physician groups. Performance payments are derived from the pool of shareable savings based on the groups' levels of financial and quality performance. Quality is measured using 32 ambulatory care quality measures covering five condition modules. The PGP Demonstration is currently in its fourth performance year.

Population Studied: Medicare FFS patients who received the plurality of their outpatient E&M care at one of ten PGP sites. PGPs included freestanding multi-specialty group practices, integrated delivery

systems, faculty group practices, and a physician network.

Principal Findings: The latest financial and quality results are reported for the second performance year. In this period, all 10 of the PGPs improved quality of care for chronically ill patients by achieving benchmark or target performance on most of the quality markers for patients. In addition, four PGPs earned performance payments for improving the quality and cost efficiency of care as their shared over \$17 million in Medicare savings. Other PGPs also had lower growth in expenditures than their local market area.

Conclusions: Lessons learned from the Demonstration continue to be shared between CMS and the participating physician groups. Results to date suggest that shared savings financial models can provide incentives for physician groups to invest in care management processes and infrastructure and redesign care processes. These investments and enhanced processes can result in better coordination of care that improves the quality and efficiency of care.

Implications for Policy, Delivery or Practice: Shared savings financial models are receiving increasing attention in the health care policy community and by some commercial payers as a way to promote higher quality and more efficient care. The PGP Demonstration is one of Medicare's first physician pay for performance initiatives and the lessons learned to date are helping to shape and inform Medicare value based purchasing initiatives. The PGP Demonstration model can also be put in the context of other Medicare value-based purchasing demonstrations that take on different designs, such as one that uses an independent third-party vendor approach (i.e., the Medicare Health Support pilot), one that uses a prospective beneficiary enrollment method (i.e., Medical Home Demonstration), or one that focuses only on high-cost beneficiaries (i.e., High Cost Beneficiary Demonstration).

Funding Source(s): CMS

▪ **Financial Results from the Medicare Physician Group Practice Demonstration**

Gregory Pope, M.S.; John Kautter, Ph.D.; Jenya Kaganova, Ph.D.; Edward Drozd, Ph.D.; Michael Trisolini, Ph.D., M.B.A.

Presented by: Gregory Pope, M.S., Program Director, Health Care Financing & Payment, RTI International, 1440 Main Street, Suite 310, Waltham, MA 02451, **Phone:** (781) 434-1742, **Email:** gpope@rti.org

Research Objective: To measure financial performance of physician groups participating in the Medicare Physician Group Practice Demonstration.

Study Design: Ten large physician groups are given financial incentives to improve the efficiency and quality of their care through a "shared savings" financial model. The groups share 80% of savings to the Medicare program above a minimum savings threshold of 2%. Savings are measured as the difference between target and actual expenditures in each of five performance years. Target expenditures are base year expenditures of beneficiaries assigned to a group trended forward by the expenditure growth of a local comparison group of Medicare beneficiaries. Assigned and comparison expenditure growth is risk adjusted. Half of shareable savings are paid as a cost control bonus to the groups, and half are prorated based on quality indicator performance. Performance payments are capped at 5% of target expenditures. Losses are accrued when actual expenditures of beneficiaries assigned to a group are more than 102% of the target.

Population Studied: Savings are calculated for Medicare fee-for-service beneficiaries who received the plurality of their primary care from a participating physician group. Beneficiaries are retrospectively reassigned each year to the physician groups. Approximately 200,000 assigned beneficiaries per year are involved in the Demonstration.

Principal Findings: Results from two performance years of the Demonstration are currently available. In the first performance year, two participating physician groups earned total performance payments of \$7.3 million and two accrued total losses of \$1.5 million. After performance payments and losses, savings to the Medicare Trust Fund were \$677,000. In the second performance year, four groups earned performance payments of \$13.8 million, and one accrued a loss of \$2.0 million. After performance payments and accrued losses, savings to the Medicare Trust Fund were \$1.6 million. Savings occurred in high-cost assigned beneficiary subpopulations, although not among congestive heart failure patients as targeted by several of the

groups. Larger savings were generated in total outpatient than inpatient expenditures, which was a surprise given the groups' focus on reducing inpatient admissions. A more rapid growth in mean risk scores among assigned than comparison beneficiaries, and the continuation of pre-Demonstration trends of lower-than-market expenditure growth among participating groups contributed to measured Demonstration savings.

Conclusions: The first two years of the Demonstration provided evidence of modest cost savings, but further investigation into the factors influencing results needs to be completed.

Implications for Policy, Delivery or Practice: The shared savings model gives provider groups financial incentives to improve efficiency and quality while limiting provider risk and maintaining beneficiary freedom of provider choice.

Generalizing the model will require simplifying the Demonstration expenditure target methodology and creating new avenues for eligible organizations to participate, including potentially allowing smaller physician practices to aggregate into larger entities for performance measurement.

Funding Source(s): CMS

Call for Panels

The Problem of Health Care Cost Growth

Brian Quinn, Ph.D.

*Sunday, June 28 * 2:30 P.M.-4:00 P.M.*

Panel Overview: Health care expenditures have been increasing by about 2.4 percent above GDP for the past four decades. However, without a better understanding of the factors driving cost growth, policies to reign in health care cost inflation are unlikely to succeed. The panel will report findings from three studies, which exploit the existing variation in health care cost growth in different sectors to identify factors that may drive this growth. The authors explore variation within and among the private health insurance, Medicare and Medicaid sectors. The first panelist identifies the types of services contributing to cost growth and addresses the role of price increases and greater utilization in contributing to that growth. The second panelist explores the differences between the level and

trajectory of spending growth and reports that variations in Medicare spending across geographic areas are not associated with spending growth. Finally, a third panelist places findings on Medicaid variation and levels of utilization in the context of existing Medicare patterns from the Dartmouth Atlas and explores relative associations across the two programs. After reviewing their findings, the panelists will address the implications these results may have for developing cost containment policies.

▪ Sources of Health Care Cost Growth among the Privately Insured

M. Kate Bundorf, Ph.D., M.B.A., M.P.H.; Laurence Baker, Ph.D.; Anne Royalty, Ph.D.

Presented by: M. Kate Bundorf, Ph.D., M.B.A., M.P.H., Assistant Professor, Department of Health Research & Policy, Stanford University, HPR Redwood Building, T108, Stanford, CA 94305-5405, **Phone:** (650) 725-0067, **Email:** bundorf@stanford.edu

Research Objective: Despite widespread concern over the size and persistence of rising health care costs in the U.S., much remains unknown about the sources of cost growth. While researchers usually identify technological advance as the primary driver of cost growth, much of the evidence for this relies on “residual” methods in which researchers attribute the portion of cost growth that is not explained by other, more easily measurable factors to changing technology. The objective of our study is to better understand the sources of health cost growth by identifying the types of services that are driving cost growth and determining how changes in the quantity of services used and changes in the prices of those services have contributed to rising health care spending among the privately insured.

Study Design: Using insurance claims data from Medstat, we document the rate of growth of spending overall as well as by sector (in-patient services, out-patient services and pharmaceuticals) between 2001 and 2006. We then decompose cost growth into higher spending due to rising prices and higher spending due to higher rates of utilization of services. We calculate cost growth due to changes in prices by multiplying the quantity of services per enrollee in 2001 by the change in average price per service between 2006 and 2001 and cost growth due to changes in quantity by multiplying the average

price per service in 2006 by the change in quantity between 2006 and 2001. We perform this type of decomposition for three types of services (in-patient, out-patient, and pharmaceuticals) as well as by clinically meaningful categories within each type of service.

Population Studied: Over 600,000 health plan enrollees (including employees and their dependents) from eight large self-insured employers who offered similar health plans in both 2001 and 2006.

Principal Findings: Spending per enrollee grew 38% between 2001 and 2006. The rate of growth was highest for pharmaceutical spending (53%) and lowest for in-patient spending (19%). Out-patient expenditures, the largest category of spending, grew by 40% between 2001 and 2006 with changes in the quantity of services (including the introduction of new services) accounting for the majority of the growth. The relative importance of changes in prices and changes in quantities in explaining cost growth, however, varied across different types of out-patient services. For example, for evaluation and management services, cost growth was relatively evenly split between changes in prices and changes in quantity. For procedures, imaging, and tests, in contrast, growth in the quantity of services per enrollee explained approximately 80% of cost growth. We will perform similar types of decomposition analyses for in-patient services and pharmaceuticals.

Conclusions: Our research findings will identify the types of services responsible for cost growth in recent years and the roles that rising prices and greater utilization play in contributing to cost growth in these areas.

Implications for Policy, Delivery or Practice: This type of evidence will assist policy-makers and practitioners in targeting cost-containment efforts to areas in which they are likely to be the most effective.

Funding Source(s): RWJF

▪ **Variation in Health Care Cost Growth**

Michael Chernew, Ph.D.; Amitabh Chandra, Ph.D.; Joseph Newhouse, Ph.D.; Lindsay Sabik, B.A.

Presented by: Michael Chernew, Ph.D., Professor, Health Care Policy, Harvard Medical School, 180 Longwood Avenue, Boston, MA 02115, **Phone:**

(617) 432-0174, **Email:**
chernew@hcp.med.harvard.edu

Research Objective: To assess whether factors related to geographic variation in levels of Medicare spending are also related to geographic variation in growth rates of Medicare spending. Considerable research investigates geographic variation in levels of Medicare spending. Yet, many observers believe the rate of spending growth is more important than the level of spending and factors related to spending growth have received much less attention. Health care spending growth threatens the stability of federal and state budgets and the viability of the private health care financing system.

Study Design: Data from 1995-2005 on per capita Medicare spending for beneficiaries enrolled in traditional fee-for-service Medicare in each of the 306 Hospital Referral Regions (HRRs) were obtained from the Dartmouth Atlas of Healthcare. We use least squares linear regression weighted by the total population in the HRR to estimate spending growth models. Covariates include indicators of healthcare infrastructure, purchaser pressure, health status and behaviors, and demographics for each HRR. By including both baseline values for covariates and the change in the covariates over time, these models allow covariates to affect the level of spending and change in spending at the HRR level.

Population Studied: Medicare beneficiaries

Principal Findings: In Medicare, spending growth across HRRs is not correlated with the level of spending. Areas that spend more per Medicare beneficiary do not systematically experience faster (or slower) spending growth. The factors that predict high levels of spending generally do not predict more (or less) rapid spending growth. Specifically, the percentage of primary care physicians in the workforce is significantly negatively associated with the level of costs, but not significantly associated with cost growth. Malpractice premiums are associated with higher levels of costs, but not with cost growth. Overall, managed care penetration is negatively associated with cost levels, while Medicare managed care penetration is positively associated with levels of spending (which may reflect enrollment of healthier beneficiaries in Medicare managed care). However, neither overall managed care penetration nor Medicare managed care penetration is associated with Medicare

spending growth. One exception is that mean income in the HRR is positively associated with both levels of spending and spending growth.

Conclusions: Most of the factors associated with variations in Medicare spending across geographic areas are not associated with spending growth.

Implications for Policy, Delivery or Practice:

These results highlight the distinction between the level and trajectory of spending growth. Since many of the factors related to spending growth vary from those related to the level of spending, policies to address spending growth should not be guided solely by analysis of variation in levels of spending.

Funding Source(s): RWJF

▪ **Variation in State Medicaid Policy, Utilization & Expenditures**

Richard Kronick, Ph.D.; Todd Gilmer, Ph.D.

Presented by: Richard Kronick, Ph.D., Professor, Family and Preventive Medicine, University of California, San Diego, 9500 Gilman Drive, La Jolla, 92093-0622, US, **Phone:** (858) 534-4273, **Email:** rkronick@ucsd.edu

Research Objective: To describe the extent of inter- and intra-state variation in the treatment of Medicaid beneficiaries, to analyze the correlates of that variation, and to determine whether quality of care or health outcomes are improved when more care is provided. To determine the effects of variation in Medicaid payment rates on volume of services and on health care quality and costs.

Study Design: Using data from the Medicaid Analytic eXtract system (MAX) for 45 state Medicaid programs, we describe inter- and intra-state variation in expenditures per beneficiary; in the utilization rates of various types of services (i.e., inpatient hospital, physician services, outpatient hospital, clinic, prescription drugs, home health, DME, HCBS, and institutional LTC); and in the price per unit of service for each type of service. We decompose variation in expenditures per beneficiary into three main components: price per unit of service, number of services received, and mix of services. We analyze the determinants of variation in use of services, paying particular attention to the effects of Medicaid payment policies.

Population Studied: To maximize the comparability of the study population across states,

we focus the analysis on Medicaid beneficiaries receiving SSI.

Principal Findings: There is substantially more interstate variation in utilization and expenditures among Medicaid beneficiaries receiving SSI than among Medicare beneficiaries. For almost every measure examined, the coefficient of variation in state-level measures of utilization and expenditures is at least twice as large for SSI Medicaid beneficiaries as for Medicare beneficiaries. The state-level correlation between Medicare and Medicaid utilization is virtually zero; states with high levels of utilization for Medicare do not necessarily have high levels of utilization in Medicaid. For example, Medicare utilization is high in Florida and low in Minnesota, while the reverse is true for Medicaid. Medicare utilization and expenditures in New York and California are relatively similar, but at opposite ends of the continuum in Medicaid. Within states, patterns of variation are similar in Medicare and Medicaid. Variation in Medicaid expenditures per beneficiary is related both to variation in price per unit of service and variation in the number of units and the mix of services. We are still working on understanding the factors that are related to variation in Medicaid utilization rates, and on understanding the relationship between utilization and outcomes.

Conclusions: The Dartmouth story is that variation in utilization for Medicare beneficiaries is driven by variation in the supply of health care resources. Medicare utilization is higher in areas with concentrations of hospital beds, specialists, and technology. The zero correlation between Medicaid and Medicare state-level utilization rates demonstrates that state-level Medicaid policies strongly mediate the supply story. Some states have been much more successful than others in purchasing a year's worth of health care for SSI beneficiaries at lower cost. The implications of these variations for quality of care are not yet clear.

Implications for Policy, Delivery or Practice: If further results suggest that states that pay more for care and that purchase more units of service do not purchase better quality or outcomes, then state Medicaid programs that spend more per beneficiary may want to consider learning from the practices of those states that spend less per beneficiary.

Funding Source(s): RWJF

Call for Panels

The Lab Reports: Evaluating State's Actions to Expand Access & Coverage

Brian Quinn, Ph.D.

*Tuesday, June 30 * 8:00 A.M.-9:30 A.M.*

Panel Overview: States continue to serve as the laboratories of health reform. Across the country, policy-makers are experimenting with various public and private options to increase access to health insurance. Surprisingly, there are few resources available for state and federal policy-makers that evaluate the effectiveness of one approach over the other. This panel will highlight research findings from four studies of state reform initiatives to expand health insurance. The first study addresses implementation of Medicaid innovations in Idaho and Kentucky looking at the impact of targeted benefit packages, disease management, reimbursement policies, and cost sharing on access to appropriate care, program sustainability, and administrative efficiency. The second study evaluates Wisconsin's BadgerCare Plus, a reform that extends health insurance coverage to all children, expands access for some adults and dramatically simplifies enrollment. The presentation will report preliminary findings on enrollment and take-up, churning, and crowd-out. The third study uses data from the CPS data to isolate the effects of health reform in Massachusetts, Illinois, and New York. It employs difference-in-difference multivariate regression models, controlling for underlying trends unrelated to the reforms. The fourth study evaluates New Mexico's State Coverage Insurance program, a public/private partnership program for working age adults. It provides information on factors associated with employer response and willingness to participate. The studies provide concrete, quantitative information about the impact of state reform initiatives targeting public and private markets. The results of these evaluations will inform the policy debate at the national level as well as in other states.

▪ Evaluating Wisconsin's BadgerCare Plus Reform Package

Thomas DeLeire, Ph.D.; Lindsey Leininger, Ph.D.; Alison Bergum, M.P.A.; Donna Friedsam, M.P.H.; Tom Oliver, Ph.D., M.H.S.A.

Presented by: Thomas DeLeire, Ph.D., Department of Population Health Sciences, University of Wisconsin School of Medicine & Public Health, 707 WARF Building, 610 Walnut Street, Madison, WI 53726, **Phone:** (608) 263-6998, **Email:** tdeleire@lafollette.wisc.edu

Research Objective: Wisconsin implemented BadgerCare Plus (BC+) on February 1, 2008, using SCHIP and other funds to extend health insurance coverage to virtually all Wisconsin children, bolster coverage for parents and other adults, and simplify the program enrollment process. This paper reports the initial findings of an evaluation of the BC+ expansion conducted by researchers at UW-Madison in conjunction with Wisconsin's Department of Health Services. The objectives of the evaluation are to determine the effects of the expansion on (1) enrollment and take-up (2) churning, and (3) crowd-out of private coverage. **Study Design:** Wisconsin administrative panel data on Medicaid-BC+ enrollment are being analyzed to estimate the impact of the program on enrollment and take-up. The data used reflect pre- and post-implementation experiences from January 2007 through September 2008. We use both CPS and Wisconsin's Family Health Survey to estimate denominators of total eligible in various income categories. Enrollment data are being merged with a statewide database of private health insurance enrollment and Wisconsin's unemployment insurance database in order to analyze of the effects of the coverage expansion on program churning and on private insurance crowd-out. Semi-structured interviews of key stakeholders are being conducted to help interpret and explain observed trends. **Population Studied:** Study populations include children of all income levels, income-eligible caretaker adults and pregnant women. In addition, we consider subpopulations defined by their income to needs ratio and rural/urban residence. **Principal Findings:** BC+ enrollment has far surpassed expectations, with total covered individuals at the end of September up by 85,000 (18%), including more than 55,000 children. This

increase included newly eligible and large numbers of previously eligible populations. The dramatic increase in enrollment appears to be attributable to automated eligibility processes, simplified and expanded categories for eligibility, an aggressive outreach and marketing campaign, and increasing needs in a declining economy. Simplification and broader income eligibility appear to reduce churning and promote continuity of coverage. The program's anti-crowd-out mechanisms have not been aggressively applied, and the data do not yet indicate the degree of substitution of public for private coverage.

Conclusions: Wisconsin's BC+ expansion included two design elements that produced the dramatic effect on enrollment and high rates of take-up: program simplification and an expansion of eligibility to children of all income levels. The program is enhancing continuity of coverage and reducing churning at most income levels.

Implications for Policy, Delivery or Practice: This evaluation will help determine the impacts of this model for health insurance coverage expansion on enrollment and take-up, program churning, and private insurance crowd-out. The findings will inform other states and the federal government about the viability of Wisconsin's model for nearly universal coverage in the absence of more comprehensive system restructuring.

Funding Source(s): RWJF

▪ **Effects of Medicaid Reform on Access to Care, Program Sustainability & Administrative Efficiency in Idaho & Kentucky**

Genevieve Kenney, Ph.D.; Ed Baker, Ph.D.; Julia Costich, J.D., Ph.D.; Jim Marton, Ph.D.; Jeff Talbert, Ph.D.; Jennifer Pelletier

Presented by: Genevieve Kenney, Ph.D., Principal Research Associate, Health Policy Center, Urban Institute, 2100 M. Street, NW, Washington, DC 20037, **Phone:** (202) 261-5568, **Email:** jkenney@ui.urban.org

Research Objective: This study examines implementation issues and impacts associated with Medicaid policy changes in Idaho and Kentucky under new flexibility given to states in the 2005 Deficit Reduction Act (DRA). We assess the effects of the reforms, including targeted benefit packages, new disease management programs, new benefits

designed to promote healthy behaviors, new reimbursement policies, and cost sharing provisions on access to appropriate care, program sustainability, and administrative efficiency.

Study Design: In the qualitative component of the study, case studies are used to understand the impact of DRA reforms on the organization and delivery of Medicaid services in Kentucky and Idaho and to address both process and impact research questions. Investigators conducted interviews with Medicaid officials, service providers, safety net institutions, community-based organizations and advocacy groups in each state in late 2008. The quantitative component of the project includes both descriptive and impact analyses to examine the DRA and related policy changes using administrative enrollment and claims/encounter data from 2.5 years before and 2.5 years after the policy changes were made (2004-2008). The analysis subdivides the post-implementation period into early and late implementation sub-periods, and changes in the post period will be compared to the pre period. In cases where a comparison group is available, we examine changes for the treatment group compared to those for the comparison group, using a difference-in-difference framework.

Population Studied: Non-disabled, non-elderly Medicaid enrollees in Idaho and Kentucky during the study period.

Principal Findings: The case study findings point to a number of implementation issues associated with launching disease management programs and benefits designed to encourage healthy behaviors, addressing access issues, and examining potential policy responses related to primary and dental care. Our quantitative analyses examine the impacts of new service limits, out-of-pocket cost sharing, and prior authorization requirements and the effects of provider reimbursement increases on dental access, receipt of primary preventive care, and reliance on the emergency room as a source of care. Our analysis of disease management programs focuses on maximizing their potential for addressing program cost growth.

Conclusions: The DRA-related Medicaid reforms undertaken by these two states have the potential to reduce costs and increase beneficiary access to care. However, care must be taken to ensure that targeted benefit packages and other changes related to prior authorization and cost sharing do not restrict access to needed care. To date, the disease management

and preventive health assistance benefits have not been implemented in such a way as to expect to see large changes in beneficiary health behaviors and health outcomes.

Implications for Policy, Delivery or Practice: The DRA provisions for Medicaid innovations have been greeted with significant interest. Budget pressures and increases in health care costs combine to make Medicaid a fiscal pressure point in most if not all states. The reforms undertaken in Kentucky and Idaho had the explicit goal of improving administrative efficiency and program cost-effectiveness while enhancing beneficiary access to appropriate types and levels of service. This study sheds light on the effectiveness of the reforms in two states that could provide important insights for other states looking to reform their Medicaid programs.

Funding Source(s): RWJF

▪ **An Evaluation of the Impacts of State Health Reform Initiatives in IL, MA & NY**

Sharon Long, Ph.D.; Alshadye Yemane, M.P.P.;
Karen Stockley

Presented by: Sharon Long, Ph.D., Principal Research Associate, Health Policy Center, The Urban Institute, 2100 M Street, NW, Washington, DC 20037-1207, **Phone:** (202) 261-5656, **Email:** slong@ui.urban.org

Research Objective: To estimate the impacts of state health reform in three states—Massachusetts, Illinois, and New York.

Study Design: Using data from the Current Population Survey, we isolate the effects of health reform on insurance coverage in each state through difference-in-difference multivariate regression models. This method estimates changes in insurance rates for target populations before and after reform, controlling for underlying trends not related to the reforms by subtracting changes in insurance status during the same period for unaffected comparison populations. We estimate the impacts using various within-state and cross-state comparison groups to test the robustness of the results. The models include a rich set of variables to control for differences between target and comparison groups and differences within each group over time that could affect insurance status, including age, race, sex, educational attainment, marital status, health status, and employment. To minimize the influence of

confounding factors on the estimates, we use propensity score weights to ensure that the comparison populations more closely match the target populations on observable characteristics.

Population Studied: Representative state samples of non-institutionalized individuals under age 65 in Massachusetts, Illinois, New York, and comparison states. Results are estimated separately for children, parents, and childless adults since state reforms impacted these populations differently. Not all study states implemented reforms for each population.

Principal Findings: Preliminary findings suggest that Massachusetts residents experienced the largest increases in insurance coverage due largely to increases in public coverage. Increases in the low-income population's coverage rates primarily drove these results. The gains in coverage were greatest for low-income childless adults who were less likely to be eligible for coverage prior to reform. The estimates showed very little evidence that reforms crowded-out employers-sponsored insurance coverage in Massachusetts. Changes in insurance status for low-income populations targeted by New York and Illinois reforms were more modest with more limited gains in public coverage and reductions in uninsurance rates. The results were generally robust to the use of different comparison groups.

Conclusions: This study found that changes in health insurance status were proportionate to the size and scope of each state's health reform, with Massachusetts having the broadest reform effort and the largest gains in insurance coverage. It provides evidence that comprehensive reform initiatives targeted at low-income populations can make a dramatic impact on reducing uninsurance rates among this population.

Implications for Policy, Delivery or Practice: As health care reform is once again on the national agenda, these findings highlight the need to learn from state health reform initiatives to better understand both which strategies are most successful at expanding coverage and the state contexts in which such expansions occur.

Funding Source(s): RWJF

▪ **Evaluation of Small Group Employer Participation in New Mexico's State Coverage Insurance (SCI) Program**

Anna Sommers, Ph.D.; Laura Spicer; Asher Mikow;
Jean Abraham, Ph.D.

Presented by: Anna Sommers, Ph.D., Senior Research Analyst, The Hilltop Institute, University of Maryland, Baltimore County, 1000 Hilltop Circle, Sondheim Hall, 3rd Floor, Baltimore, MD 21250, **Phone:** (410) 455-6280, **Email:** asommers@hilltop.umbc.edu

Research Objective: New Mexico's State Coverage Insurance (SCI) program is a public/private partnership that provides access to subsidized insurance for uninsured adults 19-64 with household incomes below 200% of the federal poverty level, including uninsured low-income employees of small business. SCI is authorized through a HIFA waiver to use SCHIP funds, state funds, and modest premiums from participating employers and employees to provide a comprehensive benefit with a \$100,000 annual cap. While considerable efforts have been made to publicize and facilitate application to the program, participation by employers has been low and most individuals enroll without employer sponsorship. This study identifies factors that have influenced employer participation in SCI and seeks to explain why many individuals enroll without employer sponsorship.

Study Design: Telephone surveys were conducted between September 2008 and January 2009 of three employer samples and individuals enrolled in SCI with no employer sponsorship. Participating employers and non-participating employers were surveyed to identify factors that influence participation. Individuals who enrolled in SCI without employer sponsorship and their employers upon consent were surveyed to assess factors explaining direct enrollment of individuals. Contact with all members of employer samples was attempted. Participating individuals with no employer sponsorship were randomly sampled and screened on employment. Employer samples (N=693) yielded response rates between 70 and 85%. Of the individual sample, 39 percent yielded bad contact information. Of those contacted, 62.3% consented to interview, and 540 were eligible and completed the survey. This sample was weighted to minimize non-response bias.

Population Studied: Four populations: (a) small employers that joined SCI since September 2007; (b) employers that called the Insure New Mexico! Group Enrollment Center since September 2007 but did not enroll in SCI after 6 months; (c) individuals newly enrolled since September 2007 without

employer sponsorship; and (d) employers of these individuals.

Principal Findings: Differences between participating and non-participating employers are analyzed based on administrative issues and perceived affordability of the program; experience with insurance offerings; and maximum amount a business like theirs should contribute to coverage. Of individuals enrolling without employer sponsorship, almost half were not employed and about 10% were self-employed. Of those employed by someone else, analysis is conducted on the characteristics of their employers, difficulties with application process, prior insurance status, prior and current medical spending, and maximum amount enrollee could afford to spend on medical care. Employers of these individuals are assessed for likely ineligibility for SCI and other reasons for not participating.

Conclusions: Where employer participation is optional, businesses may see little incentive to participate in public programs. Employment relationships may make enrollment into a public program through an employer impractical for many working individuals, who may find it simpler to enroll directly. Transparency in eligibility and simplified application procedures may assist in the recruitment of employers.

Implications for Policy, Delivery or Practice: To engage small employers with low-wage workers in statewide public/private reform solutions, it is critical to understand assistance small businesses need to navigate administrative procedures and what they perceive as an affordable contribution toward their employees' health insurance coverage.

Funding Source(s): RWJF

Call for Panels

Welfare of Health Insurance in a Weakened Economy

Brian Quinn, Ph.D.

*Sunday, June 28 * 11:00 A.M.-12:30 P.M.*

Panel Overview: The recent economic downturn has increased unemployment, jeopardized retirement savings, and limited consumer spending. As a result, individuals, employers, and policymakers are confronted with difficult budgetary decisions:

individuals question whether they can afford health insurance premiums; employers consider whether they can provide insurance; and policymakers debate whether to cut public program eligibility or limit benefits. This panel will examine the impact of health insurance—or lack of health insurance—on individuals' income, personal wealth, and consumption of goods across sectors. The first panelist will examine the effect of employer-sponsored insurance (ESI) premium increases on workers and will share findings indicating that workers absorb the majority of the increase through lower annual wages. The second panelist will examine how increased access to SCHIP, as a result of program expansions, has transferred resources to near-poor families to allow increased spending on other goods; alternatively, the third panelist will describe how families with chronic conditions in high deductible health plans report greater financial burden, such as difficulty paying medical and basic household bills, than their peers in traditional insurance. The final panelist will discuss the financial impact of major illness on the near-elderly and will quantify how this impact differs based on insurance status. The panelists will discuss the impact of insurance on individuals and families and point to the potential economic impacts, other than just the ability to purchase health care services, that result from access to affordable and appropriate insurance coverage.

▪ **Does Major Illness Cause Financial Catastrophe?**

David Dranove, Ph.D.; Keziah Cook, M.A.; Andrew Sfekas, Ph.D.

Presented by: David Dranove, Ph.D., Professor, Health Enterprise Management, Northwestern University, 2001 Sheridan Road, Evanston, IL 60035, **Phone:** (847) 491-8682, **Email:** d-dranove@northwestern.edu

Research Objective: We examine the financial impact of major illnesses on the near-elderly and how this impact is affected by health insurance. Specifically, we examine the impact of a new major illness on the financial assets of the uninsured and compare this to the impact on the insured.

Study Design: We estimate median regressions in which the dependent variable is the change in household assets, excluding the value of the primary

home. We use a difference in difference and triple difference methodology. In the former, the key predictor is “newly ill uninsured,” a variable that indicates if the individual has had a major new illness and is uninsured. We control for changes in assets of newly ill insured individuals. In the triple difference estimates, we also control for changes in assets of the uninsured that might not be correlated with, but not caused by, insurance status.

Population Studied: Nationwide sample of near elderly individuals predominantly between ages 50 and 64. The sample is drawn from repeated waves of the Health and Retirement Survey.

Principal Findings: Controlling for the effects of insurance status and illness, we find that the median household with a newly ill uninsured individual suffers a statistically significant decline in household assets of approximately 30 percent relative to households with matched insured individuals.

Consistent with theoretical predictions developed in the paper, the decline is largest for individuals with “moderate” levels of baseline assets. Newly ill insured individuals do not experience a decline in wealth compared to healthy insured individuals.

Conclusions: While insured newly ill individuals are protected against financial loss, the uninsured appear to be one illness away from financial catastrophe.

Implications for Policy, Delivery or Practice: The literature on medical bankruptcy has been confounded by methodological problems that have given cover to those who believe that the uninsured do not face financial risks in the event of an adverse health event. We show that health insurance provides important protections against financial catastrophe, thereby establishing the important role that health insurance plays in protecting individuals against risks to their assets. We also find that individuals with private insurance do not lose substantial assets in the event of a major illness. Thus, it may not be necessary to switch to a government insurance plan to provide necessary financial protections.

Funding Source(s): RWJF

▪ **The Financial Burden of Health Care Expenses for Families with Chronic Conditions in High-Deductible Health Plans**

Alison Galbraith, M.D., M.P.H.; Charlene Gay, B.A.; Dennis Ross-Degnan, S.D.; Stephen Soumerai, Sc.D.; Tracy Lieu, M.D., M.P.H.

Presented by: Alison Galbraith, M.D., M.P.H., Assistant Professor, Department of Ambulatory Care & Prevention, Harvard Medical School & Harvard Pilgrim Health Care, 133 Brookline Avenue, 6th Floor, Boston, MA 02215, **Phone:** (617) 509-9893, **Email:** Alison_Galbraith@harvardpilgrim.org

Research Objective: High-deductible health plans (HDHPs) attempt to address escalating health care costs by placing greater responsibility for costs on enrollees. There is concern that greater health care cost-sharing in such plans will be difficult to afford, especially for vulnerable groups. Our objective was to examine the financial burden of health care costs for families with chronic conditions in HDHPs compared to traditional plans.

Study Design: This cross-sectional survey was conducted by phone and mail between April and December 2008. The outcomes were six parent-reported measures of financial burden due to health care costs for any family member in the past 12 months. We used chi square tests to compare families in HDHPs and traditional plans for each financial burden measure. We used multivariate logistic regression to determine the adjusted odds of reporting any financial burden for HDHP vs. traditional plan families, controlling for having a choice of plans, having drug coverage, race/ethnicity, income, and parent age and education.

Population Studied: We studied families with at least one child <18 years old with employer-sponsored insurance in a large Massachusetts health plan. We included families where at least one person had a chronic condition based on ICD-9 codes. We selected all families enrolled for the past 12 months in HDHPs (with annual family deductibles > \$1000) and a random sample of twice as many families enrolled for the past 12 months in traditional plans without deductibles (the control group).

Principal Findings: The study sample included 297 families in HDHPs and 523 families in traditional plans (response rate 45.8%). Families in HDHPs were significantly more likely than those in traditional plans to report having medical cost-related burden, specifically: problems paying medical bills (39% vs. 25%, respectively); having to borrow or increase use of credit cards (26% vs. 15%); having to use savings (35% vs. 18%); having to set up a payment plan with a hospital or doctor's office (25% vs. 9%); having a bill sent to collections (22% vs. 9%); having trouble paying other basic

bills like food, heat, or rent (21% vs. 10%); or having any one of these burden measures (56% vs. 33%) ($p < 0.001$ for all). In adjusted analyses, families in HDHPs had increased odds of reporting any financial burden compared to those in traditional plans (OR 2.66, 95% CI 1.89-3.75), as did those with income <\$35,000 (OR 6.08, 95% CI 2.60-14.25), \$35,000-49,000 (OR 5.81, 95% CI 3.33-10.15), or \$50,000-99,000 (OR 2.31, 95% CI 1.62-3.28) compared to = \$100,000.

Conclusions: Families with chronic conditions who have HDHPs are more likely to experience financial burden due to health care costs than those in traditional plans. Lower income families are also at greater risk.

Implications for Policy, Delivery or Practice: The financial burden from health care costs may be particularly problematic for families with chronic conditions who have HDHPs. Policymakers, employers, clinicians, and families should be aware that families in HDHPs may be at elevated risk for financial burden, which may constrain families' ability to pay for necessary health care and other services.

Funding Source(s): RWJF

▪ Do Workers Bear the Cost of Rising Health Insurance Premiums Through Lower Wage Raises?

Bradley Herring, Ph.D.; M. Kate Bundorf, Ph.D.; Mark Pauly, Ph.D.

Presented by: Bradley Herring, Ph.D., Assistant Professor, Health Policy & Management, Johns Hopkins University, 624 North Broadway, #408, Baltimore, MD 21205, **Phone:** (410) 614-5967, **Email:** bherring@jhsph.edu

Research Objective: Employers and some commentators claim that rising health insurance premiums increase the operating costs for employers, resulting in either higher product prices or lower profit margins. Economists, in contrast, argue that rising premiums lead to lower wage increases for workers due to competition in the labor market. As the evidence on this issue is limited, the objectives of our research are to test whether workers bear the cost of rising premiums in the form of lower wages and to examine the extent to which wage offsets vary across workers.

Study Design: Many prior studies make cross-sectional comparisons of wages between workers with and without insurance, but this is complicated by unobserved differences between jobs that do or do not offer insurance. To address this problem, we focus instead on how changes in premiums over time affect changes in wages for workers who remain in the same job providing insurance. We examine an OLS regression model for worker-level annual changes in wages as a function of changes in premiums and a set of worker, employer, and other controls.

Population Studied: We use a sample of about 8,000 full-time wage-earners with employer-sponsored insurance in the four-year 2004 panel of the Survey of Income and Program Participation (SIPP). We link these workers to data on average employer contributions to premiums from the Medical Expenditure Panel Survey's Insurance Component (MEPS-IC) across industry groupings within each state for years 2003 through 2006. For each worker in three different time periods, we compare the annual changes in wages to the one-year lagged annual change in average linked premiums (N = 23,897).

Principal Findings: We find a significantly negative effect of changes in employer-paid health insurance premiums on changes in worker wages. About 70% of the increase in employer-paid health insurance premiums is borne by workers in the short-term through relatively lower annual wage increases. Moreover, we find that this negative effect of changes in premiums on changes in wages is concentrated in groups with relatively higher medical spending and relatively higher wages.

Conclusions: Our results are consistent with the existence of a tradeoff between employer contributions to health insurance premiums and employee wages. Focusing on annual changes in premiums and wages, we find that most of the annual increase in premium contributions is passed on to workers in the form of relatively lower wages. Moreover, our pattern of results is consistent with employers making wage offsets that coincide with easily observable characteristics related to higher expected medical spending. They are also consistent with "stickiness" in wages being an impediment for perfect incidence.

Implications for Policy, Delivery or Practice: Some reform proposals seek to increase coverage through "pay or play" employer mandates. Our

results imply that currently-uninsured workers will ultimately bear the costs of these mandates through lower wages. Other proposals seek to transition away from employment-based coverage – either towards public coverage, private group coverage through state Exchanges, or private individual insurance via tax reforms. Our results suggest that insured workers will see increases in wages as a result of these reforms.

Funding Source(s): RWJF

▪ **Consequences of SCHIP for Household Well-Being**

Helen Levy, Ph.D.; Diane Whitmore Schanzenbach, Ph.D.; Lindsey Leininger, Ph.D.

Presented by: Helen Levy, Ph.D., Research Assistant Professor, Institute for Social Research, University of Michigan, 426 Thompson Street, Ann Arbor, MI 48104, **Phone:** (734) 936-4506, **Email:** hlevy@umich.edu

Research Objective: Considerable policy attention has focused on substitution of public health insurance for private coverage ("crowd out") associated with expansions of the State Children's Health Insurance Program (SCHIP). From the perspective of a low-income family that drops private coverage to enroll in SCHIP, this switch frees up resources that can now be used for other purposes. In other words, households can take what they had been spending on private health insurance premiums and co-payments and spend it on food, clothing, or anything else they need. What do households do with this "extra" money? The goal of this project is to estimate the magnitude and nature of changes in consumption associated with the expansions of the SCHIP program that occurred between 1996 and 2002. Specifically, we estimate the impact of SCHIP expansions on household spending overall and by type (food, housing, clothing, etc.).

Study Design: The study uses a quasi-experimental design. Variation across states in the generosity of SCHIP expansions over time is used to identify the causal effect of insurance coverage on household spending. This is the same instrumental variables (IV) design that has been used to estimate the extent of "crowd out" associated with SCHIP expansions. Data on spending are from the Consumer Expenditure Study, 1996 through 2002; data used to

construct the instrument are from the 1996 and 2001 waves of the Survey of Income and Program Participation.

Population Studied: The data are nationally representative of the U.S. population. The main group of interest is families with children between 100 and 200 percent of the poverty level, who are most likely to have been affected by SCHIP expansions.

Principal Findings: We find significant increases in spending among the target population as a result of expansions of SCHIP.

Conclusions: The SCHIP program achieved the important goal of transferring resources to the near-poor, even if some of those households shifted from buying private insurance to using public coverage.

Implications for Policy, Delivery or Practice: In considering the costs and benefits of renewing the SCHIP program, policymakers should consider that “crowd-out” has an up side as well – namely, that families can devote the resources they had been using to buy private insurance to other goods. Thus, while expansions of public insurance may not necessarily result in one-for-one reductions in the uninsured population, they nonetheless improve the overall household well-being of the target population.

Funding Source(s): RWJF

Call for Panels

Patient-Reported Outcome Measurement System: New Developments & Applications

Dennis Revicki, Ph.D.

*Monday, June 29 * 3:00 P.M.-4:30 P.M.*

Panel Overview: PROMIS is an NIH initiative intended to contribute to methods for health outcomes assessment for applications in research and clinical practice. PROMIS is a national resource for accurate and efficient measurement of patient-reported symptoms, such as pain or fatigue, and health-related quality of life domain, such as physical functioning and emotional distress. Four speakers, representing PROMIS investigators, will provide an overview of the PROMIS project, short-form and computer adaptive test measures, development and psychometric analysis of the

PROMIS pediatric measures, and the short-form global PROMIS measure, and describe how PROMIS measures can be used in health services and outcomes research applications.

▪ **Comparison of PROMIS Health Profile Short Forms & CAT**

Seung Choi, Ph.D.; David Cella, Ph.D.

Presented by: Seung Choi, Ph.D., Research Assistant Professor, Center on Outcomes, Research & Education, Northwestern University Feinberg School of Medicine, 1001 University Place, Suite 100, Evanston, IL 60201, **Phone:** (224) 364-7317, **Email:** s-choi@northwestern.edu

Research Objective: To compare the measurement and efficiency of short-form and computer adaptive testing (CAT) versions of the PROMIS domain item banks.

Study Design: Short form patient-reported outcome measures are used to minimize patient burden. Interest in computer adaptive testing has increased because it can minimize testing burden without compromising accuracy. The PROMIS Health Profile (PHP) short forms have been developed to assess the health profile of patients in seven domains (anxiety, depression, fatigue, pain, physical function, social role function, and sleep disturbance). Using the PHP short forms, we investigated the relative efficiency of static short forms and CAT.

Population Studied: PROMIS Wave 1 sample which consists of a United States community dwelling, general population sample participating in a large internet panel.

Principal Findings: Compared with full-length measures, all short forms and CAT produced highly correlated scores. CAT provided marginally superior efficiency compared to static short forms. Both approaches are valid for brief measurement of these seven domains.

Conclusions: The PROMIS PHP and CAT forms provide for efficient assessment of health outcomes for clinical trials and health services research applications.

Implications for Policy, Delivery or Practice: The PROMIS short-forms and CAT measures provide great flexibility and efficiency in assessing health outcomes for clinical trials and practice settings.

Funding Source(s): National Institutes of Health

▪ **Development & Psychometric Evaluation of the PROMIS Pediatric Item Banks**

Darren DeWalt, M.D., M.P.H.; Debra Irwin, Ph.D.; Brian Stucky; David Thissen, Ph.D.; Esi Morgan DeWitt, M.D.; James Varni, Ph.D.

Presented by: Darren DeWalt, M.D., M.P.H., Assistant Professor of Medicine, Division of General Internal Medicine, University of North Carolina School of Medicine, 5039 Old Clinic Building, CB#7110, Chapel Hill, NC 27599, **Phone:** (919) 966-2276, **Email:** darren_dewalt@med.unc.edu

Research Objective: To develop and evaluate the measurement characteristics of the Patient-reported Outcome Measurement Information System (PROMIS) pediatrics item banks for physical function, emotional health, sociability, fatigue, and pain.

Study Design: PROMIS pediatrics item banks were developed based on existing questionnaire items and qualitative research, item review and revision, new item creation and cognitive debriefing interviews. Children were surveyed and item response theory analyses were used to evaluate the measurement characteristics of the 293 items covering physical function, emotional distress, sociability, fatigue and pain. The PedsQL Generic and KIDSCREEN-52 scales were included to describe the population.

Population Studied: A total of 3,890 children recruited from pediatric clinics in North Carolina and Texas, and 239 children recruited from schools in North Carolina.

Principal Findings: 4,129 children were surveyed, with 50.6% female, 55% 8-12 years, and 58% white, 23% African-American, and 17% Hispanic. Based on the IRT analyses, item banks were developed for emotional distress (depression, anxiety, anger), fatigue (tired, lack of energy), physical function (mobility, upper extremity/dexterity), pain, and social functioning with peers. Domain scores had good reliability (0.63 to 0.88). We found good evidence supporting domain coverage and preliminary evidence that the domain scores and short-forms have good construct validity.

Conclusions: The PROMIS pediatrics item banks and short-form measures provide for accurate, efficient, and valid assessment of important domains of health-related quality of life for children. Future research is needed to evaluate responsiveness and to confirm validity.

Implications for Policy, Delivery or Practice: The PROMIS pediatrics domains and item banks will be useful as measures of health-related quality of life for clinical trials, epidemiologic studies, and for monitoring health in clinical practice and general population settings.

Funding Source(s): NIH

▪ **Development of Physical & Mental Health Summary Scores from PROMIS Global Items**

Ron Hays, Ph.D.; Jakob Bjorner, Ph.D.; Dennis Revicki, Ph.D.; Karen Spritzer, B.S.; David Cella, P.H.D.

Presented by: Ron Hays, Ph.D., Professor, Department of Medicine, University of California, Los Angeles, 911 Broxton Avenue, Los Angeles, CA 90024-2801, **Phone:** (310) 794-2294, **Email:** drhays@ucla.edu

Research Objective: To evaluate the Patient-Reported Outcomes Measurement Information System (PROMIS) global health items.

Study Design: We analyzed 10 self-reported global health items administered primarily by web-base survey in the PROMIS project. We derived physical and mental health summary scores and estimated associations with the EQ-5D index score and the PROMIS physical function, fatigue, pain impact, anxiety and depression domain scores.

Population Studied: Items were administered to 21,133 individuals (19,601 subjects were recruited by an internet vendor and the remaining 1,532 were recruited from PROMIS research sites).

Principal Findings: Exploratory and confirmatory factor analyses supported a two-factor model. Global physical health (GPH; 4 items) and global mental health (GMH; 4 items) scales were created. The scales had internal consistency reliability coefficients of 0.81 and 0.86, respectively. GPH correlated more strongly with the EQ-5D than did GMH ($r = 0.76$ versus 0.59). GPH correlated most strongly with pain impact ($r = -0.75$) while GMH correlated most strongly with depressive symptoms ($r = -0.71$).

Conclusions: Two dimensions representing physical and mental health underlie the global health items in PROMIS. These global health scales can be used to efficiently summarize physical and mental health in patient-reported outcome studies.

Implications for Policy, Delivery or Practice:

Reliable and valid measures of health-related quality of life provide for efficient measurement of health in patient-reported outcome studies.

Funding Source(s): National Institutes of Health

▪ PROMIS: Advancing the Science of Patient-Reported Outcomes Assessment in Health Services Research

Dennis Revicki, Ph.D.

Presented by: Dennis Revicki, Ph.D., Senior Vice President, Center for Health Services Research, United BioSource Corporation, 7101 Wisconsin Avenue, 600, Bethesda, MD 20814, **Phone:** (301) 664-7261, **Email:** dennis.revicki@unitedbiosource.com

Research Objective: PROMIS is a publicly-funded cooperative research group consisting of over 80 investigators from U.S. academic institutions and the National Institutes of Health. Over the past 4 years, we developed, refined and tested approximately 1,000 self-report questions about physical, mental and social health.

Study Design: We administered these questions on an electronic (internet) platform, to a cross sectional sample of approximately 20,000 people from the general US population and selected clinical samples. Using a combination of classical methods to test dimensionality and item response theory (IRT) modeling, we derived nine (9) calibrated item banks that measure unidimensional concepts of fatigue, pain impact, pain behavior, physical function, depression, anxiety, anger, satisfaction with participation in social roles, and satisfaction with participation in discretionary social activities. In addition to the above, on projects running concurrent with this first wave of testing, we developed and tested item banks in parallel domains for pediatrics, as well as adult banks of sleep/wake disturbance and psychosocial impact of cancer.

Population Studied: A cross sectional sample of approximately 20,000 participants from the general United States population and selected clinical samples.

Principal Findings: We have compared the reliability (precision) and validity of these item banks and their derivative tools (short forms and computerized adaptive testing; CAT) to existing "legacy" instruments measuring the same concepts.

In every case, the precision of CAT and equivalent-length short forms outperforms the "legacy standard" selected for comparison. We have evidence supporting the validity of the PROMIS measures.

Conclusions: The PROMIS tools are currently being tested in longitudinal clinical studies, both within the PROMIS network and with collaborators outside the network. PROMIS item banks are now available for further research with the PROMIS network.

Implications for Policy, Delivery or Practice: The PROMIS item banks and measures provide flexible and psychometrically sound health outcome measures for monitoring the health of population, clinical studies, and clinical practice.

Funding Source(s): National Institutes of Health

Call for Panels***Implementation of Clinical Information Technology in U.S. Physician Practices***

Diane Rittenhouse, M.D., M.P.H.

Tuesday, June 30 * 9:45 A.M.-11:15 A.M.

Panel Overview: Use of information technology is central to efforts to improve the quality, safety, and efficiency of health care services and is emphasized in new models of ambulatory care delivery such as the Chronic Care Model and the Patient-Centered Medical Home. This panel brings together findings from The 2nd National Study of Physician Organizations and the Management of Chronic Illness, a national study of large medical groups and independent practice associations; the National Survey of Electronic Health Record Adoption, a national study of physicians; and the TransforMed National Demonstration Project, a randomized controlled trial of primary care re-design. Both quantitative and qualitative data will be presented to: 1) determine the level of implementation of electronic health records, chronic disease registries, and other clinical information technologies (CIT) in large and small physician practices; 2) discuss practice characteristics, financial and other incentives that are associated with greater CIT use; 3) examine the link between CIT use, the use of care management processes for chronic illness, and other quality improvement activities; 4) explore the challenges and facilitators to CIT implementation

and use in primary care practice. Discussion will be encouraged to develop an improved understanding of the complexities surrounding CIT implementation. Such an understanding can inform efforts by providers and policymakers to promote use of CIT and improve health care quality.

▪ **Implementation & Use of Health Information Technology in Primary Care Settings**

Jesse Crosson, Ph.D.; Pamela Ohman-Strickland, Ph.D.; John Scott, M.D., Ph.D.; Elizabeth Clark, M.D.; Benjamin Crabtree, Ph.D.; Nicole Isaacson, Ph.D.

Presented by: Jesse Crosson, Ph.D., Assistant Professor, Department of Family Medicine, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, MSB B-648, 185 South Orange Avenue, Newark, NJ 07103, **Phone:** (732) 743-3367, **Email:** jesse.crosson@umdnj.edu

Research Objective: To describe variation in the implementation and use of health information technology (HIT) in primary care practice settings and how this affects patient care quality.

Study Design: Synthesis of findings from four studies examining the implementation and use of HIT in primary care practice settings. We reviewed 927 medical records in 50 primary care practices and conducted participant observation and in-depth interviews with 120 physicians and medical staff in 19 additional practices. We used hierarchical logistic regression to analyze quantitative data. Diverse teams of investigators coded and analyzed qualitative data using template organizing and grounded theory approaches to identify common themes.

Population Studied: Primary care practices participating in four studies.

Principal Findings: Practices included family medicine, general internal medicine, pediatrics and obstetrics/gynecology. Most were independent practices with fewer than 10 clinicians. In depth analysis of one practice found that dysfunctional communication patterns and inadequate preparation for electronic health record (EHR) implementation led practice members to disable key quality of care functions. Review of medical records in 50 practices showed that, after adjustment for patient and practice characteristics, patient care in the paper record

practices was more likely to meet guidelines for treatment of diabetes (OR, 1.67; 95% CI, 1.07-2.60) and attainment of intermediate outcomes (OR, 2.68; 95% CI, 1.49-4.82) than in EHR-using practices, indicating that implementation and usage problems are likely widespread. Two-year follow up in these practices found that those with EHRs had not made greater improvements than paper-based practices. In depth fieldwork in 12 practices found that members of primary care practice organizations that successfully implemented e-prescribing (e-Rx) exhibited greater familiarity with the capabilities and modest expectations about the benefits likely to accrue from use of this HIT. In a subsequent study of 6 e-Rx practices, none were using this technology to monitor and improve patient adherence to prescribed medications. Few clinicians in these practices used formulary information for making cost-effective prescribing choices.

Conclusions: Health information technologies such as EHRs and e-Rx have great potential to improve the quality, safety and efficiency of care delivered in primary care settings. This potential has been unevenly realized in many typical primary care practice settings. More effective implementation and use of HIT in primary care settings will require ensuring that key practice members have realistic expectations about the potential for disruption of existing routines. Practice-level resources will need to be dedicated to training and preparation of primary care practice members to ensure that these technologies are implemented and used effectively.

Implications for Policy, Delivery or Practice: Efforts to expand the use of these technologies in primary care settings should include sufficient resources for technical support and user training to ensure the full realization of the potential of these technologies. Adoption incentives should be implemented in concert with quality incentives to ensure that those adopting these technologies are accountable for their effective use. Primary care practices need effective tools to assist in reengineering existing workflow to make optimal use of HIT.

Funding Source(s): none, National Heart Lung and Blood Institute, Centers for Medicare and Medicaid Services, Agency for Healthcare Research and Quality, Centers for Disease Control and Prevention, National Institute of Diabetes, Digestive and Kidney Diseases.

▪ **Electronic Health Records in Small Physician Practices: Availability, Use & Perceived Benefits**

Catherine DesRoches, Dr.P.H.; Somwya Rao, Ph.D.; Eric Campbell, Ph.D.; David Blumenthal, M.D., M.P.P.

Presented by: Catherine DesRoches, Dr.P.H., Institute for Health Policy, Harvard Medical School, Massachusetts General Hospital, Boston, MA 02114, **Phone:** (617) 724-6958, **Email:** cdesroches@partners.org

Research Objective: 1) To assess the level of electronic health record (EHR) adoption among ambulatory care physicians in solo and small group practice in the US. 2) To assess the adoption of specific clinical information technologies among physicians in solo and small group practice. 3) To understand the impact, as well as critical barriers against and incentives for HIT adoption among these providers.

Study Design: We conducted a mail survey of a nationally representative random sample of physicians identified from the 2007 Physician Masterfile of the American Medical Association. Of the 4484 eligible respondents, 2758 completed the survey yielding a response rate of 62%. We grouped physicians into four categories – solo or two, 3 to 5, 6 to 10, and 11 or more physician practices. Our primary outcome variables were EHR adoption, availability and use of specific HIT functionalities, barriers, facilitators, satisfaction with HIT functionalities, and impact of EHR adoption on clinical practice.

We used cumulative logit models or logistic regression models to evaluate the association of the different outcomes described above with practice size controlling for physician and practice characteristics. We obtained adjusted percentages and the accompanying standard errors from these regression models.

Population Studied: Physicians providing ambulatory care in the US

Principal Findings: Only 2% of physicians in solo or two-physician practices reported a fully functional EHR (6% reported a basic EHR system) compared to 11% (25% a basic system) of physicians from 11+ groups practices. A similar trend was found for each of the 19 functionalities; with physicians in the smallest practices being the least likely to report these were available to them. These physicians were

also the least likely to report using the functionalities when they were available. Plans to acquire EHR in the near future (24 months) was associated with group size with 55% of the physicians practicing in solo or two physician group practices reported no plans to acquire an EHR in the near future compared with 5% among the physicians in the 11+ group practices. Overall, adopters were highly satisfied with these systems and believed that they had a positive impact on quality of care. Major barriers to adoption included cost, uncertainty about return on investment, and worries about finding the right system to meet their practice needs.

Conclusions: We assessed the association between group size and adoption of a) EHRs, b) of specific HIT functionalities, c) plans for EHR adoption d) impact, and e) barriers. Our results suggest an inverse relationship between group size and EHR adoption, with the smallest practices, those with 1 – 2 physicians being the least likely to adopt EHRs and to use the technologies when they were available.

Implications for Policy, Delivery or Practice: Approximately 50% of all physicians in the US practice in solo or 2 physician practices. Our findings suggest that these physicians are the least likely to adopt these health information technologies. Finding ways to incent these physicians to adopt such systems will be critical if our nation is to realize the potential of EHRs to improve the health and healthcare of all Americans.

▪ **HIT & Miss: Challenges of Health Information Technology in Primary Care Practices**

Carlos Jaén, M.D., Ph.D.; Kurt Stange, M.D., Ph.D.; Elizabeth Stewart, Ph.D.; Paul Nutting, M.D., M.S.P.H; Will Miller, M.D., M.A.; Benjamin Crabtree, Ph.D.

Presented by: Carlos Jaén, M.D., Ph.D., Department Chair, Departments of Family & Community Medicine & Epidemiology and Statistics, University of Texas Health Science Center at San Antonio, 527 North Leona Street, San Antonio, TX , **Phone:** (210) 567-4550, **Email:** Jaen@uthscsa.edu

Research Objective: To describe clinical information technology (CIT) lessons learned from a randomized trial of primary care practice re-design

toward the Patient-Centered Medical Home (PCMH).

Study Design: The American Academy of Family Physicians funded a 2-year trial designed to test the implementation of the PCMH model outlined in the Future of Family Medicine Report. Practices were randomized to facilitated or self-directed arms. An ongoing process evaluation used qualitative data from site visits/interviews, communication logs, learning collaboratives generated by facilitators and independent evaluators. Comparative case analyses were performed as an ongoing, iterative process with results shared in real-time and lessons used to inform hypothesis development and testing. Quantitative data were collected at baseline, 9 months, and 28 months; they included physician/staff surveys to assess effects of the trial on the practices, patient surveys to assess patient-centered care, and medical record reviews to assess healthcare outcomes.

Population Studied: Thirty-six family medicine practices represented a wide range of size, ownership status, payer mix, and geographic location. The patient population typically mirrored the demographics of location. All but 5 practices had electronic health records (EHRs) at baseline.

Principal Findings: Qualitative analyses reveal that even highly motivated facilitated practices struggled with adoption of HIT. A commonly noticed impediment was the lack of interoperability of the systems sold to these small and medium size practices. Implementation of these technological solutions required at times heroic efforts from the practice leaders with little support from their vendors. Even if practices were part of larger health systems, the ability of the larger CIT system to be adapted to the local practice was a major problem. Facilitators often played a critical role as an interface between the practice and the technology vendor. Adopting CIT services led to changes in workflow that at times revealed problems in the relationship infrastructure of the practice that needed to be addressed before proceeding. Specific EHR vendors were reluctant to support free-standing disease management programs that may compete with programs they were developing. Despite these issues, many of the practices in the trial were successful implementing patient portals, websites, laboratory order interfaces and e-prescribing. A majority of patients reported that they found the CIT services to be helpful in their relationship with their doctor and helpful in their connections with the

practice. Similarly, clinicians and staff agreed that the EHR use during the visit does not interfere with the doctor-patient relationship.

Conclusions: Promoting HIT adoption in small and medium size family practices is much harder than anticipated. Practices may benefit from an external facilitator that helps interface with the EHR vendors. Patients welcome the adoption of HIT services in primary care.

Implications for Policy, Delivery or Practice: Technology implementation affects every facet of the practice and is not plug-and-play. In addition to financial support, practices implementing new HIT require significant external human infrastructure support.

Funding Source(s): American Academy of Family Physicians and the Commonwealth Fund.

▪ **Financial Incentives, Quality Improvement Programs & the Adoption of Information Technology**

Diane Rittenhouse, M.D., M.P.H.; James Robinson, Ph.D.; Lawrence Casalino, M.D., Ph.D.; Robin Gillies, Ph.D.; Stephen Shortell, Ph.D.; Sara Fernandes-Taylor

Presented by: Diane Rittenhouse, M.D., M.P.H., Assistant Professor, Department of Family & Community Medicine & Philip R. Lee Institute for Health Policy Studies, University of California, San Francisco, 500 Parnassus Avenue, MU 308-E, San Francisco, CA 94143, **Phone:** (415) 514-9249, **Email:** rittenhouse@fcm.ucsf.edu

Research Objective: Physician use of electronic health records and other clinical information technologies (CIT) is considered essential to maximize the quality and efficiency of health care delivery in the ambulatory setting, yet adoption of information technology by physician practices has lagged behind other sectors in the United States. We studied the role of health insurers' financial incentives (including pay-for-performance) and quality improvement initiatives in accelerating adoption of CIT in large physician practices. We also examined the association between the use of CIT and the use of care management processes (CMPs) for diabetes, asthma, CHF and depression.

Study Design: 35-minute telephone survey conducted March 2006 – March 2007. Response rate 60.3%. Use of 19 clinical information

technology capabilities was measured, building on the classification proposed by the Institute of Medicine. Multivariate statistical analysis was conducted to determine financial and organizational factors associated with adoption and use of CIT. Use of 6 CMPs was measured for four chronic illnesses, including disease registries or lists; guideline-based reminders at the point of care; performance feedback for physicians; patient reminders; specially trained patient educators; and nurse care managers. Multivariate statistical analysis was conducted to determine the association between CIT use and CMP use.

Population Studied: The medical director or chief administrator of all physician organizations (medical groups and independent practice associations) with 20 or more physicians that care for patients with asthma, CHF, depression and/or diabetes. (eligible organizations n = 892)

Principal Findings: Use of information technology varied across physician organizations, including electronic access to laboratory test results (medical groups 49.3%, IPAs 19.6%), alerts for potential drug interactions (medical groups 33.9%; IPAs 9.5%), electronic drug prescribing (medical groups 41.9%; IPAs 21.1%), and physician use of email with patients (medical groups 34.2%; IPAs 29.1%). Adoption of CIT was stronger for physician organizations evaluated by external entities for pay-for-performance and public reporting purposes ($p=.042$) and for those participating in quality improvement initiatives ($p=.001$). We did not find an association between clinical information technology and CMP implementation.

Conclusions: External incentives and participation in quality improvement initiatives are associated with greater use of clinical information technology by large physician practices. Chronic care management processes are not entirely dependent on IT implementation.

Implications for Policy, Delivery or Practice:

These data inform the effort by the Institute of Medicine and others to increase the adoption of CIT in the ambulatory setting, and to improve the delivery of chronic illness care through delivery system improvements.

Funding Source(s): RWJF, The Commonwealth Fund; California HealthCare Foundation

Call for Panels

Hospital Responses to the Market & Regulatory Environment & the Impact on the Community

Debbie Rogal, M.P.P.

Monday, June 29 * 9:45 A.M.-11:15 A.M.

Panel Overview: Policymakers have raised concern regarding the role of hospitals in the community and the spillover effects they may have. This panel will examine how hospitals' responses to market pressures and federal legislation affect the community in terms of hospital prices, access to services, and community benefit. The first panelist will examine how health plan concentration affects hospital prices and will share findings suggesting that hospital prices are lower for hospitals operating in markets with a higher concentration of health plans. In addition, this panelist will discuss how the hospital hazard rate for closing urban hospital trauma centers varies by factors such as financial pressure, payer mix, health plan concentration, and patient population. The second panelist will explore how hospital ownership status affects the provision of medical services within an urban health care market, examining whether nonprofit hospitals are more likely to offer more or less profitable services based on the for-profit hospital market share. Finally, the third panelist will discuss the effect of new IRS community benefit reporting requirements for hospitals, using the state of Maryland as the unit of observation. The panelist will discuss how hospitals respond to the reporting requirements and will examine the provision of community benefit across hospitals. The panelists will explore the behavior of hospitals given the market and regulatory environment and will discuss how their responses impact the larger community.

▪ **The Provision & Reporting of Community Benefits by Hospitals: Lessons from Maryland**
Bradford Gray, Ph.D.; Mark Schlesinger, Ph.D.

Presented by: Bradford Gray, Ph.D., Principal Research Associate, Health Policy Center, Urban Institute, 2100 M. Street NW, Washington, DC

20037, **Phone:** (202) 261-5342, **Email:** bgray@urban.org

Research Objective: Responding to concerns that nonprofit hospitals have been insufficiently charitable, the Internal Revenue Service is implementing new reporting requirements for hospitals in 2010. What are the effects of such reporting requirements, what will be shown, and what issues will arise? We address these questions by examining the experience in Maryland, which has had similar reporting requirements since 2004, with categories that include community health services, health professional education, research, financial contributions, mission-related services, and community building activities, in addition to charity care. Definitions are standardized to facilitate comparability.

Study Design: The study is based on analysis of Maryland hospitals' community benefit reports from 2004-2007 and interviews with senior officials at 20 of the state's 45 nonprofit hospitals. Hospitals were selected for diversity of size, mission, type of community served, region, system membership, and patterns of community benefit spending (high, low, stable, changing).

Population Studied: Nonprofit acute care hospitals in Maryland.

Principal Findings: 1) There is a substantial learning curve in responding to community benefit reporting requirements. Collection of certain types of information is difficult. 2) Even with strong effort to standardize reporting rules, hospitals differ in how some expenditures get reported. 3) There are huge differences in patterns of community benefit spending among hospitals in this one small state, and only a subset of hospitals manage their community benefit activities. 4) Charity care averages less than 2.5% of operating expenses even though charity care costs are built into hospital rates. 5) Charity care averages only one-third of community benefit expenditures. 6) Community benefit expenditures reflect a combination of local needs, available resources, and definitions of mission. 7) Notwithstanding the burden of reporting, Maryland hospital officials generally believe the net effects of the reporting requirement have been positive.

Conclusions: Although there are challenges, hospitals are able to respond to reporting requirements such as the new IRS ones. Community benefit reporting requirements can have positive

effects on hospitals and on their missions. The IRS's requirements will likely re-stimulate discussion of what expectations should attach to tax exemptions, what should count as a charitable activity, and how much variation is acceptable.

Implications for Policy, Delivery or Practice: Standardized community benefit reporting requirements that permit comparisons among hospitals and over time present challenges for hospitals, stimulate changes in their activities, and can prompt important conversations about meeting community needs. Interpretation will be tricky. Data in the first reporting year will likely be problematic and details about what can be counted can have a large effect on the amount that is reported.

Funding Source(s): RWJF

▪ **What Do Nonprofit Hospitals Maximize? Medical Service Provision & Market Ownership Mix**

Jill Horwitz, Ph.D., J.D., M.P.P.; Austin Nichols, Ph.D., M.P.P.

Presented by: Jill Horwitz, Ph.D., J.D., M.P.P., Louis & Myrtle Moskowitz Research Professor of Business & Law, Law School, University of Michigan, 625 South State Street, Ann Arbor, MI 48104, **Phone:** (734) 763-9501, **Email:** jrhorwit@umich.edu

Research Objective: Studies of hospital ownership – nonprofit, for-profit, or government – typically consider organizational behaviour in isolation. Hospitals, however, operate in markets that have varied population, competitive, and ownership characteristics. Here we examine the effects of: 1) individual hospital ownership and 2) the spillover effects of hospital ownership on other hospitals within hospital markets on medical service provision.

Study Design: We gathered extensive data on hospital characteristics (e.g. ownership, service provision) and population information to estimate the interaction between hospital ownership and market mix in two ways: 1) whether medical service provision by nonprofit, government, and for-profit hospitals varies with for-profit market share in urban hospital markets; and 2) whether hospital operating margins depend on the interaction between ownership and market mix.

Population Studied: All acute care medical services at all urban, general and medical hospitals in the United States from 1988-2005.

Principal Findings: Service provision systematically varies both by firm type and market mix. We identify a large and significant spillover effect of hospital ownership. Nonprofits in markets with relatively high concentrations of for-profits are more likely to offer more profitable and less likely to offer less profitable services than those in markets with relatively low concentrations of for-profits. Government hospitals demonstrate a similar pattern, although the results are somewhat weaker than those for nonprofits. Among for-profit hospitals, we identify no systematic and significant relationship in service provision by market type (high or low for-profit market share). We find no significant effect of for-profit market share on the operating margins of nonprofit hospitals.

Conclusions: Hospital ownership, as well as the mix of ownership types within markets, is related to the provision of profitable and unprofitable services.

Implications for Policy, Delivery or Practice: Knowing the relationship between hospital ownership, market mix, and medical service provision can be used to help policymakers better predict the effects of their interventions, such as setting reimbursement rates and licensing services, on the availability of medical services (particularly underprovided services) in a market. Considering the ownership status of a hospital and the nature of its competitors can help policymakers better fix the incentives facing providers to offer such care. These results also help inform a question that has been central to recent policy debates – the community benefit provided by nonprofit hospitals. Committees in both houses of Congress and several state legislatures have investigated hospitals to determine whether their tax benefits are justified, and have focused on the provision of free care for indigent patients. However, it is unclear that the social benefits of nonprofits would be increased were they required to supply higher levels of uncompensated care; these results suggest that such requirements would induce hospitals to offset the losses by increasing profitability of other activities to break even on average. In fact, requiring nonprofits to supply higher levels of uncompensated care could drastically lower their community benefit.

Funding Source(s): RWJF

▪ Do Concentrated Health Plan Markets Depress Hospital Prices?

Yu-Chu Shen, Ph.D.; Glenn Melnick, Ph.D.; Vivian Wu, Ph.D.

Presented by: Yu-Chu Shen, Ph.D., Assistant Professor of Economics, Graduate School of Business & Public Policy, Naval Postgraduate School, 555 Dyer Road, Code GB, Monterey, CA 93943, **Phone:** (831) 656-2951, **Email:** yshen@nps.edu

Research Objective: With the continuing long-term trend of consolidation among US health plans, providers have voiced growing concern that health plans are acquiring excessive market power that they will use to depress the prices they pay to providers under negotiated contracts. The American Hospital Association (2007) argued that health plan consolidation leads to “reimbursement to hospitals and physicians that is below competitive levels” thereby threatening patient access and quality of care (AHA, 2007). The American Medical Association (AMA) proposed that physicians be allowed to collectively bargain with health plans in order to “level the playing field” in price negotiations. Others, including consumer groups, argue that dominant health plans, if they are able to depress prices paid to providers, will damage health care access, as some providers will be forced out of the market and quality will deteriorate if prices are too low to provide sufficient capital to replace equipment or invest in new technology. This study combines data on hospitals in MSAs in the U.S. along with measures of hospital and health plan concentration and other covariates to explore the relationship between health plan market concentration and hospital prices.

Study Design: A retrospective study of all short-term, general, non-federal hospitals located in MSAs in the U.S. between 1994-2000 and 2001-2005 using hospital/MSA fixed-effects translog regression models of operating cost and net patient revenue.

Population Studied: All short-term, general, non-federal hospitals located in MSAs in the U.S.

Principal Findings: We find that while prices are lower for hospitals operating in more concentrated health plan markets, the converse is true that prices are higher for hospitals operating in more concentrated hospitals markets. Further, our descriptive results show that most US hospitals

(90%) are in MSAs where health plan market concentration is lower than the concentration of hospital markets.

Conclusions: Both hospital and health plan market concentration affect hospital prices and hospitals markets are more concentrated than health plan markets in the US.

Implications for Policy, Delivery or Practice:

Further research is needed but our findings suggest that policymakers need to take into account the relative concentration between health plan and provider markets.

Funding Source(s): RWJF

▪ **Analysis of System-Level Risk Factors for Hospital Trauma Center Closures: 1990-2005**

Yu-Chu Shen, Ph.D.; Renee Hsia, M.D., M.Sc.; Kristen Kuzma, B.A.

Presented by: Yu-Chu Shen, Ph.D., Assistant Professor of Economics, Graduate School of Business & Public Policy, Naval Postgraduate School, 555 Dyer Road, Code GB, Monterey, CA 93943, **Phone:** (831) 656-2951, **Email:** yshen@nps.edu

Research Objective: We analyze whether hospitals' hazard rates of shutting down trauma centers are higher due to financial pressures or in areas with vulnerable populations (such as minorities or the poor).

Study Design: This is a retrospective study of all hospitals with trauma center services in urban areas in the continental U.S. between 1990 and 2005, identified from the American Hospital Association Annual Surveys. These data were linked with Medicare cost reports, and supplemented with other sources, including the Area Resource File. We analyze the hazard rates of trauma center closures among several dimensions of risk factors using discrete-time proportional hazard models.

Population Studied: All hospitals with trauma center services in urban areas in the continental U.S. between 1990 and 2005.

Principal Findings: The number of trauma center closures increased from 1990-2005, with a total of 339 during this period. The hazard rate of closing trauma centers in hospitals with a negative profit margin is 1.38 times higher than those hospitals without the negative profit margin ($p < 0.01$). Hospitals receiving more generous Medicare

reimbursements face a lower hazard of shutting down trauma centers (ratio 0.58, $p < 0.01$) than those receiving below-average reimbursement. Hospitals in areas with higher HMO penetration face a higher hazard of trauma center closure (ratio 2.06, $p < 0.01$). Finally, hospitals in areas with higher shares of minorities face a higher risk of trauma center closure (ratio 1.69, $p < 0.01$). Medicaid load and uninsured populations, however, are not risk factors for higher rates of closure after we control for other financial and community characteristics.

Conclusions: Our findings give an indication on how the current proposals to cut public spending could exacerbate the trauma closure, particularly among areas with high shares of minorities. In addition, given the negative effect of HMOs on trauma center survival, the growth of the Medicaid managed care population should be monitored. Finally, high shares of Medicaid or uninsurance by themselves are not independent risk factors for higher closure as long as financial pressures are mitigated.

Implications for Policy, Delivery or Practice: Our findings suggest that efforts to cut public spending to hospitals with trauma centers could exacerbate rates of trauma center closure, particularly in areas with a high proportion of minorities. Targeted policy interventions, as well as further research on the causes, are needed to address these systems-level disparities.

Funding Source(s): RWJF

Call for Panels

Measuring Patient Safety in Hospitals Using Administrative Data: Challenges & Opportunities

Amy Rosen, Ph.D.

Tuesday, June 30 * 9:45 A.M.-11:15 A.M.

Panel Overview: The purpose of this panel is to describe findings from several organizations that are presently collaborating in efforts to examine the criterion validity of the AHRQ Patient Safety Indicators (PSIs). These indicators were developed as tools for screening "potentially preventable" complications that patients experience as a result of exposure to the healthcare system. They are widely used for case finding, quality improvement,

benchmarking, and monitoring hospital safety. The PSIs are calculated using administrative data, and are therefore subject to the inaccuracies and variability in ICD-9-CM coding that exist across providers and facilities. Thus, information about the extent to which they identify “true” adverse events would be useful for promoting more accurate benchmarking and stimulating safety improvement initiatives in areas where they are most needed. We present results from a diverse set of hospitals in both the US and England, including academic medical centers, VA hospitals, and hospitals affiliated with the National Health Service in England. We report on the tools developed to screen for PSIs, the positive predictive value of each of the PSIs (the percentage of PSI-flagged cases that were confirmed to have the event by medical record review), the potential preventability of the event (if it occurred), the classification of cases as false positives and reasons for this classification, and suggestions for improving the PSI algorithms, such as ICD-9-CM coding modifications and adding “present-on-admission” codes. This panel will conclude with the lessons learned from research on PSI validation and highlight the findings that impact both policy and practice.

▪ **Validating the Patient Safety Indicators in the Veterans Health Administration**

Ann Borzecki, M.D., M.P.H.; Haytham Kaafarani, M.D., M.P.H.; Susan Loveland, M.A.T.; Hillary Mull, M.P.P.; Amy Rosen, Ph.D.

Presented by: Ann Borzecki, M.D., M.P.H., Senior Scientist, Center for Health Quality Outcomes & Economic Research, 200 Springs Road, Bedford, MA 01730, **Phone:** (781) 687-2870, **Email:** amb@bu.edu

Research Objective: The Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (PSIs) use administrative data to screen for potential inpatient adverse events. Several of these indicators have recently been endorsed by the National Quality Forum as hospital quality measures. However, the validity of such measures in different systems, including the Veterans Health Administration (VA), is unclear. As part of a comprehensive PSI validation study, we are currently evaluating the criterion validity of fifteen PSIs; this study reports on results from three PSIs: 1)

postoperative pulmonary embolus or deep vein thrombosis (PE/DVT), 2) accidental puncture or laceration (APL) and 3) iatrogenic pneumothorax (IP).

Study Design: This was a retrospective observational study using FY03-07 inpatient administrative and electronic medical record data from 28 VA hospitals. Hospitals were selected based on geographic diversity and observed PSI rates. We applied the AHRQ PSI software (v.3.1a) to administrative data to identify cases suspected of having a postoperative PE/DVT, APL or IP. To determine the positive predictive value (PPV) of these indicators, trained nurses conducted chart reviews of 112 flagged cases for each PSI from sample hospitals, using standardized chart abstraction tools and guidelines developed by AHRQ and modified for VA use. Based on previously reported PPV estimates, this number was selected to ensure reasonably narrow PPV confidence intervals (range=10 to 20%). Physicians performed additional false positive analysis to determine the strengths and weaknesses of each PSI. Inter-rater reliability was also measured between two nurse abstractors.

Population Studied: Veterans receiving VA inpatient acute care at 28 selected hospitals from FY03 through FY07.

Principal Findings: The PPVs for postoperative PE/DVT, APL and IP were 44% (95% CI, 34-53%), 86% (78-91%) and 78.4% (70-85), respectively. Inter-rater reliabilities were >90% for all indicators. For postoperative PE/DVT, 62% of false positives were related to a PE/DVT that occurred prior to admission or before the surgical procedure; the remaining 38% were attributed to coding issues due either to individual coder errors or to inherent limitations in available codes. For APL, 33% of false positives were due to events occurring prior to admission; 40% appeared to be due to coding inaccuracies, for example 2 cases were associated with oozing from a central venipuncture site. For IP, 35% of false positives were due to events occurring prior to admission; 22% were related to thoracic procedures known to breach the pleural cavity, 13% were non-procedure related (i.e., spontaneous) pneumothoraces. About 13% of false positives had no chart documentation of pneumothorax, while 9% had a radiology report suggesting a “possible pneumothorax”, with later reference to the radiologic changes being more likely due to other pathology.

Conclusions: While the PSI algorithms for APL and IP demonstrated high predictive values for detecting “true” events, the postoperative PE/DVT PSI did not accurately detect cases in which a postoperative PE or DVT occurred.

Implications for Policy, Delivery or Practice: The accuracy and usefulness of these PSIs for quality measurement could be improved by relatively simple coding enhancements, such as adoption of “present on admission” codes, and by better training of coders in general adverse event coding and in specific post-procedure complication coding.

Funding Source(s): VA

▪ **Evaluation of the AHRQ Patient Safety Indicators Identified Through Administrative Data in Academic Medical Centers**

Joanne Cuny, R.N., B.S.N., M.B.A.

Presented by: Joanne Cuny, R.N., B.S.N., M.B.A., Director of Quality, University HealthSystem Consortium, 2001 Spring Road, Suite 700, Oakbrook, IL 60523, **Phone:** (630) 954-2439, **Email:** Cuny@uhc.edu

Research Objective: Evaluate cases identified with the Patient Safety Indicator algorithms for “Postoperative Respiratory Failure” (PSI 11) and “Pressure Ulcer” (PU) (PSI 3); explore methods used for prevention, recognition, and screening in academic medical centers; and describe specific factors that identify patients at increased risk.

Study Design: Two distinct multicenter University HealthSystem Consortium (UHC) studies with retrospective medical record reviews of cases meeting enrollment criteria based on specific ICD-9-CM discharge codes selected from the UHC Clinical Data Base (CDB), a UB-04 administrative data set. For Postoperative Respiratory Failure, the enrollment criteria matched the AHRQ specifications; 97% of patients were discharged between October 2005 - July 2007. One hospital required retrieval of eligible CDB cases with discharges between October 2002 – October 2005 to capture 21 of their 29 eligible cases. Two distinct cohorts were identified for the PU study among adult cases discharged between July 2007 - July 2008, with length of stay > 4 days. Cohort 1 cases matched AHRQ specifications, cohort 1a with present on admission (POA) flag = no and cohort 1b with POA = yes. Cohort 2 cases were identified from 14 high

risk DRGs (PU rate > 80 per 1000 discharges during Q2/2007 – Q1/2008). Cases without ICD-9-CM codes for PU were screened for any documentation of PU. In both studies, data abstraction tools were used to gather presence or absence of objective confirmation of the PSI; documentation of prevention, recognition and screening methods; and specific patient characteristics.

Population Studied: 18 UHC academic medical centers (AMCs) submitted data for 692 cases meeting the criteria for Postoperative Respiratory Failure. 32 UHC AMCs submitted data for 6090 cases meeting the enrollment criteria for the PU study.

Principal Findings: The PPV for Postoperative Respiratory Failure was high (93%). The false positive rate was higher among cases with qualifying diagnosis codes alone (14.9%) than among those with procedure codes alone (5.5%) or both diagnosis and procedure codes (4.6%). 23% of true positive cases expired; 8% of surviving patients were discharged on ventilator support and 4% had related readmissions within 30 days of discharge. In cohort 1a of the PU study (POA=no), the PPV was 60%; in 24% of cases the PU was POA; 15% had no PU during the admission. 15% of cohort 1b cases (POA=yes) had at least one HA PU. In cohort 2, 15% of screened cases had a HA PU; 11% had a PU POA.

Conclusions: The PPV for Postoperative Respiratory Failure is high and these patients are at increased risk for morbidity and mortality. The PPV for PU is relatively low at 60%. A significant number of cases with PU do not receive the appropriate ICD-CM codes.

Implications for Policy, Delivery or Practice: Additional study of both PSIs is needed to better understand effective methods of screening and prevention. Improved physician documentation may contribute to increased accuracy in coding.

▪ **Positive Predictive Value & Potential Preventability of AHRQ Patient Safety Indicators in a National Sample**

Patrick Romano, M.D., M.P.H.; Garth Utter, M.D.; Richard White, M.D.; Patricia Zrelak, R.N., Ph.D.; Daniel Tancredi, Ph.D.; Jeffrey Geppert, J.D.

Presented by: Patrick Romano, M.D., M.P.H., Professor of Medicine & Pediatrics, University of California, Davis Division of General Medicine,

4150 V Street, P.S.S.B. Suite 2400, Sacramento, CA 95817, **Phone:** (916) 734-7237, **Email:** psromano@ucdavis.edu

Research Objective: AHRQ Patient Safety Indicators (PSI) have become a widely used tool for identifying potential safety-related events in hospitals, but little is known about their criterion validity across multiple hospitals

Study Design: To assess the criterion validity of the PSIs, to improve guidance about how to interpret PSI rates, and to evaluate potential specification changes, AHRQ designed the PSI Validation Pilot Project and undertook similar collaborative studies with the Veterans Health Administration, the University HealthSystem Consortium, the National Association of Children's Hospitals and Related Institutions, and the Gordon and Betty Moore Foundation. These studies all involved retrospective review of randomly sampled records of cases that flagged positive on selected PSIs.

Population Studied: In response to a national call for volunteers for AHRQ's Pilot Project, 47 hospitals from 29 states (with mean PSI rates similar to the Nationwide Inpatient Sample) abstracted records from 2005-06 using standard tools and guidelines. AHRQ contractors provided support through training webinars, written documents, electronic discussions, and feedback. Phase 1 focused on five PSIs specified below; phase 2 (now underway) includes five additional PSIs, while phase 3 will address PSI sensitivity by finding false negative cases. Positive predictive value (PPV) was defined as the percentage of PSI-flagged cases that were confirmed by record review. This abstract includes final PPV estimates and related data on the potential preventability of these events.

Principal Findings: For "accidental puncture and laceration" (N=249), PPV was 91% (7% miscoded, 2% predated admission). Of the 226 confirmed events, 170 (75%) were potentially clinically significant; 51 (30%) involved the gastrointestinal tract, 42 (25%) involved the bladder, 33 (19%) involved the dura, 27 (16%) involved a blood vessel. For "iatrogenic pneumothorax" (N=200), PPV was 78% (4% miscoded, 7% predated admission, 11% with exclusionary diagnosis or procedure). Of the 156 confirmed events, 69 (44%) occurred during insertion of a central venous catheter; only 7% and 9% of these insertions were performed with ultrasound or fluoroscopic guidance, respectively.

For "postoperative DVT/PE" (N=155), PPV was 83% (7% miscoded, 10% predated admission); however, another 35% of flagged cases were false positives from a strict clinical perspective (20% hospital-acquired preoperative DVT/PE, 9% upper extremity DVT, 6% superficial/unspecified DVT). For "selected infections due to medical care" (N=191), PPV was 54% (21% miscoded, 20% present at admission, 4% with exclusionary diagnosis). Of the 104 confirmed events, 77 (74%) were related to central venous catheters; time to infection was shortest for femoral catheters (5.7 ± 3.4 days) and longest for peripherally inserted catheters (12.5 ± 7.7 days). For "postoperative sepsis" (N=164), PPV was 41% (17% miscoded, 17% predated admission, 25% non-elective surgery). **Conclusions:** The PPV of five AHRQ PSIs in a nonrandom but representative sample of US hospitals varied from 41% to 91%. Incorporating "present at admission" codes would substantially improve most of these PPVs.

Implications for Policy, Delivery or Practice: The five evaluated PSIs have variable PPVs, which should be considered in selecting indicators for public reporting and pay-for-performance. We identified opportunities for improved care related to bladder injury during pelvic surgery, use of ultrasound guidance during central venous catheter insertion, and earlier removal of femoral catheters. **Funding Source(s):** AHRQ

▪ Patient Safety Indicators for England from Hospital Administrative Data

Sarah Scobie, Ph.D.; Veena Raleigh; Jeremy Cooper; Stephen Bremner; Rachel Carr

Presented by: Sarah Scobie, Ph.D., Head of Analysis & Feedback Unit, Analysis & Feedback Unit, National Patient Safety Agency, 4-8 Maple Street, London, 0, UK

Research Objective: To derive and test the validity of patient safety indicators for England in terms of face validity, association with patient outcome and comparison with US data.

Study Design: Nine patient safety indicators developed by the US Agency for Healthcare Research and Quality (AHRQ) were derived using Hospital Episode Statistics (HES) from England for 2003/04, 2004/05 and 2005/06. A matched case-control analysis was undertaken to examine whether

cases had longer lengths of stay and higher mortality than controls matched for age, sex, HRG, main specialty and hospital trust (a hospital trust is a hospital or group of hospitals providing clinical services for the National Health Service).

Comparisons were undertaken with findings from a similar study in the US. For selected indicators, comparisons were made with data from the national patient safety incident reporting database.

Population Studied: Inpatients in NHS trusts in three years for all NHS trusts in England (approximately 13 million episodes of care).

Principal Findings: There was good consistency in national rates for the nine indicators across three years. For all indicators except obstetric trauma (caesarean delivery), cases had longer hospital stays than matched controls ($p < 0.001$). Mortality in cases was also higher than in controls for most indicators ($p < 0.001$); exceptions were the obstetric trauma indicators. Excess length of stay and mortality in cases were greatest for the post-operative hip fracture and sepsis indicators. England's PSI² rates were lower than US rates, although increased length of stay in cases was greater in England than in the US, except for iatrogenic pneumothorax, where there was reasonable consistency. Similarly, excess mortality in England was higher than in the US, except for the obstetric trauma indicators where there were low numbers of deaths in both countries. Differences between England and US in excess length of stay and mortality were most marked for post-operative hip fracture. Comparison with incident reporting data was possible for some indicators, and indicated incomplete capture of patient safety events in both administrative and incident data.

Conclusions: Hospital administrative data sets provide a potentially useful low burden, low cost source of information on safety events. The AHRQ indicators have good validity with English data, and improved event recording could support the monitoring of patient safety. Indicator differences, as well as differences in length of stay and mortality between England and the US probably reflect differences in the depth of event coding, and in health systems and patterns of healthcare provision.

Implications for Policy, Delivery or Practice: Safety indicators are less well developed in England than indicators relating to other aspects of quality of care. Although we have noted caveats to these patient safety indicators, they could potentially be

used, alongside other local and national data sources, for improving coding.

Funding Source(s): National Patient Safety Agency

Call for Panels

Community-Level Healthcare Reform & Multistakeholder Collaboratives: Findings from the Aligning Forces for Quality Project

Dennis Scanlon, Ph.D.

Tuesday, June 30 * 8:00 A.M.-9:30 A.M.

Panel Overview: Although the recent presidential campaigns have brought substantial attention to federal healthcare reform efforts, there remains a growing interest in community-level approaches such as local measurement and reporting of quality, large-scale “consumer engagement” efforts, and advancement of community-level quality improvement initiatives. Much of this work is being executed by multi-stakeholder collaborative organizations comprised of providers, consumers, payers, and employers. Due in part to the paucity of supporting literature, debate remains regarding the potential of community-level reform, generally, and of voluntary multi-stakeholder organizations, specifically, to advance lasting and effective reform. Using experience and research from the Robert Wood Johnson Foundation's Aligning Forces for Quality (AF4Q) project, a \$300 million initiative to provide funds and technical assistance to local communities to improve quality of care, this panel will discuss topics related to community-level healthcare reform efforts through multi-stakeholder organizations. The panel will consist of an opening presentation that will provide an overview of the community-level health reform efforts and four research papers, using data from AF4Q and other regional initiatives. The first paper discusses community-level approaches to elicit stakeholder participation in multistakeholder collaboratives. The second paper discusses community-level public reporting efforts with a focus on the individual characteristics associated with exposure to and use of public quality reports. The third paper discusses the effectiveness of multi-stakeholder organizations to execute large-scale “consumer engagement” efforts. The final paper will discuss the

effectiveness of community-based quality improvement efforts to certify physicians under NCQA's Diabetes Physician Recognition Program (DPRP).

▪ **Determinants of Awareness & Use of Public Reporting among the Chronically Ill Individuals**

Jon Christianson, Ph.D.; Jean Abraham, Ph.D.; Daniel Maeng, Ph.D.; Dennis Scanlon, Ph.D.; Jeff Alexander, Ph.D.; Jessica Mittler, Ph.D.

Presented by: Jon Christianson, Ph.D., Professor, Health Policy & Management, University of Minnesota, 420 Delaware Street, Southeast, Minneapolis, MN 55455, **Phone:** (612) 625-3849, **Email:** chris001@umn.edu

Research Objective: We examine the patterns of awareness and use of public provider quality reports in a population of people with chronic illnesses by testing the following hypotheses: 1) individuals with chronic illnesses are more likely to be aware of and use physician reports than hospital reports; 2) those who are more "activated" are more likely to report greater awareness and use of both physician and hospital reports; 3) individuals with chronic illnesses for which there is more quality information in reports specific to their illnesses are more likely to use physician quality reports; and 4) the more reports that are available and the longer the reports have been available, the more likely are people to be aware of and use them.

Study Design: We focus on a subgroup of people (the chronically ill) for whom the public reports (especially physician quality reports) are likely to be the most relevant and useful. We combine consumer survey data with data on the characteristics of reports available in the community, which have not been explicitly considered in prior studies of awareness and use of public reports. We also control for the respondent's level of consumer engagement in managing their own health and health care by using Hibbard's Patient Activation Measure (PAM-13). We used logistic regression models to estimate the probabilities of awareness and use of the reports as functions of individual and market characteristics.

Population Studied: Adults residing in 14 Aligning Forces for Quality (AF4Q) communities, who are 18 years or older and have at least one of the following five chronic conditions: diabetes, hypertension, heart disease, asthma, and depression (N=7,337). A

random-digit dial (RDD) telephone survey was conducted from June 2007 through August 2008 to collect data from the target population.

Principal Findings: The results are generally consistent with our hypotheses: a higher level of activation is positively and significantly associated with the probabilities of awareness and use of provider reports. Also, a greater number of physician and hospital reports in a community is significantly associated with a greater awareness of the reports, while a longer length of hospital report availability is associated with a greater use of these reports.

Moreover, there is some evidence that those with hypertension are less likely than those with diabetes to be aware of and use physician reports.

Conclusions: Our results are consistent with the hypothesis that consumer awareness and use of public reports on health care providers are determined not only by individual characteristics such as one's level of engagement but also by community-level efforts to disseminate more information to the consumers, particularly among the chronically ill population.

Implications for Policy, Delivery or Practice: The continuation of public reporting over time increases the likelihood of report awareness and use. Efforts to increase consumer engagement could increase awareness and use of public reports, but awareness and use also are related to illness type and the degree to which the information in a report relates specifically to treatment of an individual's condition.

Funding Source(s): RWJF

▪ **Community-Level Initiatives to Execute Consumer Engagement Activities**

Grant Martsolf, M.P.H., R.N., Ph.D.; Patricia Keenan, Ph.D.; Dan Maeng, Ph.D.; Jessica Mittler, Ph.D.; Dennis Scanlon, Ph.D.; Robert Hurley, Ph.D.

Presented by: Grant Martsolf, M.P.H., R.N., Ph.D., Graduate Assistant, Health Policy & Administration, Penn State University, 504 Ford Building, University Park, PA 16802-6500, **Phone:** (814) 863-0875, **Email:** grm153@psu.edu

Research Objective: Effective approaches to promote patient engagement and self management are needed to improve health care quality and address rising costs. This study examines how grant funded initiatives in 14 communities devise and execute viable consumer engagement strategies. We

assess how they define consumer engagement, assemble coalitions of stakeholders, and implement strategies and how these efforts progress over time. These strategies are an integral part of a region-focused program to enhance quality of care for patients with chronic conditions carried out by coalitions of multi-sector stakeholders.

Study Design: The study is part of a multi-methods evaluation of the Aligning Forces for Quality program of the Robert Wood Johnson Foundation. The assessment of consumer engagement (CE) activities draws on three data sources: 1) review of proposed activities of each community to address the solicitation aims of organizing and enacting CE initiatives; 2) refined CE work plans developed by the communities during their first, second, and third year while receiving technical assistance and participating in a learning collaborative; and 3) protocol-driven baseline interviews with 276 key informants across the communities; 4) 46 protocol-driven bi-annual interviews with alliance leaders; 5) routine tracking of consumer engagement activities through web-searches, document review, and observation of meetings and discussions.

Population Studied: The community-based coalitions are the unit of analysis. The teams are composed of representatives of providers, health plans, employers, community organizations, consumers, and consumer advocates with a special emphasis on persons with chronic conditions.

Principal Findings: Early on in the process, the coalitions spent much of their time assembling CE work teams, coming to consensus on CE definitions, and trying to determine areas of focus. Now that CE work teams have been functioning for multiple years, select communities are now making progress on a number of pointed initiatives in the areas self management programs, assisting consumers in choosing high performing providers of care, and promoting health literacy. However, progress remains slow in this area and initiatives often highly focused on a single disease or issue.

Conclusions: Even with grant funds, general guidance, and expert technical assistance, crafting a large, community-based strategy for CE is a long process. Evidence from multiple years of the AF4Q initiative highlights the opportunities and the challenges of promoting more active consumer roles in influencing quality of chronic care and a commitment to quality improvement.

Implications for Policy, Delivery or Practice: The slow pace of progress on large-scale, community-level consumer engagement may limit the immediate impact of “consumer directed” healthcare reform. And while significant population-level changes in consumer engagement is likely to be a long process requiring patience and perseverance, many communities have been successful at building infrastructure to promote change.

Funding Source(s): RWJF

▪ **Determinants of Stakeholder Participation in Multi-Stakeholder Health Alliances**

Jessica Mittler, Ph.D.; Jeff Alexander, Ph.D.; Laura Bodenshatz, M.S.W.; Grant Martsolf, M.P.H., R.N., Ph.D.; Dennis Scanlon, Ph.D.

Presented by: Jessica Mittler, Ph.D., Assistant Professor, Health Policy & Administration, Penn State University, 601 Ford Building, University Park, PA 16802-6500, **Phone:** (814) 865-1925, **Email:** dxs62@psu.edu

Research Objective: A number of communities are developing voluntary health collaboratives, called alliances, among health care plans, providers, purchasers and consumers to facilitate integration and coordination of efforts to improve the quality of care for the chronically ill. A key factor hypothesized to facilitate the success of such voluntary, multi-stakeholder alliances is securing sustained participation of community stakeholders. Using a cost-benefit framework, we examine the early experiences of voluntary multi-stakeholder alliances formed to improve care for the chronically ill in 14 communities to identify key factors influencing participation from the stakeholder perspective.

Study Design: Data are from 14 communities developing multi-stakeholder alliances to improve chronic care community-wide as part of the Aligning Forces for Quality demonstration. These data were gathered through structured surveys and semi-structured face-to-face interviews with 570 and 275 survey and interview respondents, respectively, across the 14 communities. Descriptive analysis and multivariate regression were used to identify factors affecting stakeholders’ level of participation, investment and commitment to the alliance.

Population Studied: All stakeholder participants in the 14 multi-stakeholder health alliances of the Aligning Forces for Quality demonstration

Principal Findings: Survey results suggest the benefits of participation in the alliances outweigh the costs overall, although there was substantial variation by community (from 60% to 95% of a community's respondents). Stakeholder perceptions of greater benefits of alliance participation were significantly related to more effective alliance leadership and stronger shared vision of alliance purpose and goals. Important benefits of participation included moving the respondent's own organization towards its goals, getting access to key policy-makers, developing collaborative relationships with other organizations, gaining access to target populations, and being perceived as a leader in the community. Stakeholder perceptions of higher costs of alliance participation were significantly associated with less effective leadership and better management of the alliance. Qualitative data indicate that key participation challenges include lack of agreement on the methods to achieve alliance goals, competing priorities for resources, aims that are at variance with their organizational interests, and skepticism about benefits accruing to their organization and the community. Many participants expressed serious concerns about the ability to retain the active participation of members over time if the alliances are not able to demonstrate observable results that align with their particular organization's interests.

Conclusions: Stakeholders are sensitive to the structure and leadership of multi-stakeholder alliances; they affect their perceptions about the potential success of the alliance and thus their willingness to participate, invest and commit to these efforts. Although general concerns about these alliances are similar across sites, the strength of these concerns varies across communities, which have different histories of collaboration.

Implications for Policy, Delivery or Practice: A thorough understanding of stakeholder priorities is imperative for developing health alliances that attract and sustain broad participation and progress. We believe that alliances that are responsive to their community's particular history and priorities and appropriately modify their governance structures and functioning as these efforts and their communities evolve will likely enhance their chances of success.

Funding Source(s): RWJF

▪ **A Community-Level Effort to Achieve Physician Certification from NCQA's Diabetes Physician Recognition Program**

Dennis Scanlon, Ph.D.; Beich Jeff, Ph.D.; Patti Simino Boyce, Rn., Ph.D.

Presented by: Dennis Scanlon, Ph.D., Associate Professor, Health Policy & Administration, Penn State University, 504 Ford Building, University Park, PA 16802-6500, **Phone:** (814) 865-1925, **Email:** dxs62@psu.edu

Research Objective: The objective of this study was to study a pay-for-participation approach to motivate quality improvement (QI) within primary care physician practices. The intervention was formulated by a multi-stakeholder health coalition and consisted of monetary (a \$1,000 honorarium and payment of application fees) and nonmonetary incentives (consulting services and claims-based registry reports) to primary care physicians to encourage participation in the National Committee on Quality Assurance's (NCQA's) Diabetes Physician Recognition Program (DPRP).

Study Design: This was an exploratory case study of a nonrandomized intervention with no control sites. The outcomes of interest were receipt of DPRP recognition and performance on DPRP measurements, as well as qualitative information regarding practice decisions about quality improvement. Primary data were collected over a two-year period. Data were gathered from interviews with key members of the coalition, practice managers and QI staff of participating physician practices. Data, including practice level data submitted to NCQA, were also obtained from the clinical consultant working with participating practices.

Population Studied: The intervention took place over a two-year period in eight primary care physician practices with large minority patient populations located in the Rochester, NY area. The unit of analysis was the physician practice.

Principal Findings: Eight of 11 invited practices participated in the program. Out of a total of 79 physicians, 37 (47%) received NCQA DPRP recognition. Receipt of recognition was likely the result of a combination of pre-existing performance and improvements in processes made during the project. Practices performed well in LDL and BP

control; moderately well in HbA1c control, foot examinations and nephropathy assessment; and, poorly in documentation of diabetic retinal exams. While sample size prevented hypothesis testing, size of practice was unrelated to receipt of DPRP recognition. All practices with an electronic medical record and patient registry achieved recognition. Strong physician leadership and the presence of a QI infrastructure were believed to be associated with DPRP recognition. Physician leaders noted several motivations for participation including, the honorarium, the opportunity to measure performance against national benchmarks and a general desire to improve quality.

Conclusions: The majority of participating practices listed the pay-for-participation program as positive for the practices' QI efforts, suggesting this type of pay-for-participation program may be a viable strategy for promoting QI in physician office practices. Importantly, participating practices in this pilot were self-selected and thus hypotheses generated from this study would need to be further tested.

Implications for Policy, Delivery or Practice:

Participating physicians in this program were employed in safety net practices so it is uncertain if the incentives provided would be as effective in recruiting non-safety net practices. Also, while the practices noted that the program stimulated their interest in QI activities, absent financial or other incentives, it is uncertain that they will sustain their efforts in the future. It is also unclear if and how a program of this nature can reach scale to influence most primary care physician practices in the community, and if so, where the resources to fund such an effort would come from.

Funding Source(s): RWJF

Call for Panels

Public Reporting in Nursing Homes: Evaluating Intended & Unintended Effects

Rachel Werner, M.D., Ph.D.

Monday, June 29 * 3:00 P.M.-4:30 P.M.

Panel Overview: Persistent quality problems in U.S. nursing homes have been attributed, in part, to the lack of publicly available quality information to

stimulate consumer choice of care and provider competition for high-quality care. In response, in 2002, the Centers for Medicare and Medicaid Services began publicly reporting quality of care at over 17,000 U.S. nursing homes on their website, Nursing Home Compare. While public reporting is a potentially powerful tool to improve health care quality, numerous empirical questions about the intended and unintended consequences of public reporting remain unanswered. To help understand the effect of public reporting, this panel will report findings that investigate the effect of public reporting in the setting of nursing homes. It will address the following questions: 1) Did nursing homes' market share change after public reporting was initiated and how were these changes related to patient sociodemographic characteristics? 2) How did public reporting change nursing home finances? 3) Did nursing homes select healthier patients after the initiation of public reporting? 4) How did public reporting affect racial disparities in health care quality? These results will help inform the policy debate on the benefits and risks of public reporting in the nursing home sector.

▪ **The Effect of Public Reporting on Racial & Ethnic Disparities in Post-Acute Care Quality**
R. Tamara Konetzka, Ph.D.; Rachel Werner, M.D., Ph.D.

Presented by: R. Tamara Konetzka, Ph.D., Assistant Professor, Health Studies, University of Chicago, 5841 S. Maryland, MC2007, Chicago, IL 60637, **Phone:** (773) 834-2202, **Email:** konetzka@uchicago.edu

Research Objective: Amid the popularity of market-based quality improvement incentives such as public reporting, concerns have emerged that racial and ethnic disparities may be exacerbated by these programs. Racial and ethnic minorities may have limited access both to quality information and to high-quality providers, blunting consumer-driven changes in quality. In addition, if providers that predominantly serve minority patients lack the resources necessary to invest in quality improvement, then provider-driven quality improvement will be smaller for these patients. Very little empirical evidence exists to guide the policy debate on this important unintended consequence of quality improvement incentives.

The objective of this study was to test empirically the extent to which public reporting affects disparities in health care quality, drawing on evidence from the nursing home post-acute care sector.

Study Design: Prior work has shown improvement in reported quality under public reporting for the three primary post-acute care quality measures included in the launch of public reporting in nursing homes – Nursing Home Compare—in 2002 (pain, delirium, and improvement in walking). Building on these results, we used data from the nursing home Minimum Data Set to assess whether the improvement in reported measures was consistent for whites, blacks, and Hispanics, using race indicators interacted with a policy indicator for the post-Nursing-Home-Compare period in patient-level linear regressions. We ran the analysis with and without facility-level fixed effects; the analysis without fixed effects reflects the total change in disparities and the fixed-effects analysis reflects the change in disparities controlling for site of care. All regressions used facility-clustered standard errors and adjusted for patient-level risk using a rich set of controls from the Minimum Data Set and Medicare claims.

Population Studied: 8,108 Medicare-certified nursing homes that were subject to public reporting between 1999 and 2005

Principal Findings: Post-acute care quality as defined by the Nursing Home Compare measures consistently improved for all three groups --Whites, blacks, and Hispanics – after the launch of Nursing Home Compare. However, the magnitude of improvement was consistently and substantially larger for whites than for blacks or Hispanics, on average about twice as large. Controlling for site of care did not substantially change the results.

Conclusions: Although public reporting of post-acute care quality was associated with higher quality post-acute care across racial and ethnic groups, disparities in quality also increased under public reporting.

Implications for Policy, Delivery or Practice:

While improved quality for all groups is a positive indication, our finding of increased racial and ethnic disparities raises concerns that the quest to improve health care quality through public reporting may have negative unintended consequences. Public reporting should be accompanied by additional efforts to equalize benefits.

Funding Source(s): AHRQ

▪ **Effect of Public Reporting on Nursing Home Financial Performance**

Jeongyoung Park, Ph.D.; Rachel Werner, M.D., Ph.D.; R. Tamara Konetzka, Ph.D.

Presented by: Jeongyoung Park, Ph.D., Postdoctoral Fellow, Medicine, University of Pennsylvania, 423 Guardian Drive, Philadelphia, PA 19104, **Phone:** (215) 573-4423, **Email:** parkjeo@mail.med.upenn.edu

Research Objective: Publicly reported quality information may cause consumers to take a more active role in choosing high-quality providers. If this is the case, public reporting may have indirect financial consequences by shifting market share from low- to high-quality providers. The goal of this study is to examine whether public reporting of nursing home quality information launched in 2002 affected nursing home financial performance.

Study Design: Using a facility-level fixed-effects model, the effect of public reporting on financial performance was measured in two ways: (1) by comparing financial performance in the post-public reporting period (2003-2005) to the pre-public reporting period (1999-2002); and (2) by comparing financial performance in 2002 to financial performance in 2003, 2004, and 2005 to capture both immediate and persistent effect of public reporting. The effects were estimated separately by performance on reported quality scores because public reporting is likely to improve financial performance for high-scoring facilities more than for low-scoring facilities. Financial performance was calculated from Medicare cost reports from 1999 through 2005, measured as profits, revenues, and expenses. Publicly reported quality measures were calculated from the Minimum Data Set from 1999 to 2005. These included 3 post-acute and 12 chronic care quality measures that the Centers for Medicare and Medicaid Services include in Nursing Home Compare. We defined facilities as high-scoring if quality scores based on all 15 measures were in the top quartile after Nursing Home Compare or improved from before the launch of Nursing Home Compare to after its launch. Conversely, we defined low-scoring facilities as those where quality scores were in the bottom quartile after Nursing Home

Compare or stayed the same or worsened from before to after public reporting.

Population Studied: 7,521 freestanding Medicare-certified nursing homes between 1999 and 2005 in the US

Principal Findings: High-scoring nursing homes had improvement in financial performance as measured by profits. In particular, a significant improvement in both total and operating margins occurred and continued after public reporting. Conversely, low-scoring facilities experienced significant declines in operating margins. Among high-scoring facilities, increases in expenses associated with public reporting were likely offset by increases in revenues possibly because those facilities invested additional resources in improving quality and, therefore, attracted more market share, which ultimately increased profits. These results were consistent with trends in occupancy for high- and low-scoring facilities.

Conclusions: Public reporting improves financial performance for high-scoring facilities, possibly by increasing competition based on quality. High-scoring facilities may be able to reinvest these profits for further quality improvement, whereas low-scoring facilities may not be able to sustain quality improvement interventions due to lack of enough fiscal resources.

Implications for Policy, Delivery or Practice: The incentives inherent to public reporting appear to be working as intended in that nursing homes that have high reported quality or improve reported quality reap economic rewards. However, safeguards may be necessary to ensure that low-quality facilities have the necessary resources to improve.

Funding Source(s): AHRQ

▪ **Cream-Skimming of Low-Risk Patients after Initiation of Public Reporting: Evidence from Nursing Homes**

Daniel Polsky, Ph.D.; Rachel Werner, M.D., Ph.D.; R. Tamara Konetzka, Ph.D.; Elizabeth Stuart, Ph.D.

Presented by: Daniel Polsky, Ph.D., Associate Professor, Medicine, University of Pennsylvania, 423 Guardian Drive, Philadelphia, PA 19104,

Phone: (215) 573-5752, **Email:**

polsky@mail.med.upenn.edu

Research Objective: Public reporting of quality information is potentially a powerful way to improve

health care quality. Whether public reporting causes providers to “cream-skin” or select healthier patients in an effort to improve their report card scores is unknown but widely debated. The objective of this study is to empirically test for cream-skimming of post-acute care patients after public reporting was initiated in Nursing Home Compare using measures of pain control, delirium, and improvement in walking.

Study Design: Nursing homes may improve reported quality by changing “true” quality or by changing patient risk, since reported quality is not fully risk adjusted. Therefore, using the Minimum Data Set from 1999-2005, we measured facility-level changes in “true” quality by using propensity score matching, matching all post-acute care residents in the pre-Nursing-Home-Compare period to those residents in the same nursing home with similar clinical characteristics in the post-Nursing-Home-Compare period to keep risk constant, and then taking the difference. We also constructed facility-level changes in reported quality by calculating reported quality in the same manner used by the nursing home report card and then taking the difference in reported quality between before and after public reporting was initiated. Facility-level changes in risk were then obtained by subtracting the change in true quality from reported quality. We then used linear regression to test whether reported post-acute care quality changed as a function of changes in risk profiles, market competition, and proportion of services dedicated to post-acute care. We hypothesized that cream-skimming may be more prevalent in more competitive markets (because reported quality is more likely to have an effect on demand in these markets) and in facilities that predominantly serve post-acute care residents (because reported quality of post-acute care may have a larger effect on market share for these facilities). All regressions were also stratified at the median of baseline facility quality, as facilities with lower baseline quality may be more likely to engage in cream-skimming to improve reported quality.

Population Studied: 8,108 Medicare-certified nursing homes that were subject to public reporting between 1999 and 2005

Principal Findings: Nursing homes that had improvements in reported post-acute care quality also had statistically significant reduction in their risk profiles after public reporting was initiated. This relationship between improved reported quality

and lower risk profiles was more pronounced in highly competitive markets and in nursing homes that cared for a larger proportion of post-acute care residents. In stratified regressions the relationship between improved reported quality and lower risk profiles, and its interaction with market competition and the facility's proportion of post-acute care patients, remained statistically significant for facilities with low baseline quality, but was close to zero and non-significant for facilities with high baseline quality.

Conclusions: Public reporting in the setting of post-acute care quality was associated with significant changes in facility risk profiles. These changes were consistent with cream-skimming in response to public reporting in an effort to improve their reported quality.

Implications for Policy, Delivery or Practice: Our finding of cream-skimming raises concerns that, in its current form, public reporting may have harmful unintended consequences. Future efforts should be dedicated to minimizing the unintended consequences.

Funding Source(s): AHRQ

▪ **Changes in Market Share in Response to Public Reporting: Effects of Education**

Rachel Werner, M.D., Ph.D.; Jeongyoung Park, Ph.D.; R. Tamara Konetzka, Ph.D.; Edward Norton, Ph.D.; Daniel Polsky, Ph.D.

Presented by: Rachel Werner, M.D., Ph.D., Assistant Professor, Medicine, University of Pennsylvania, 423 Guardian Drive, Philadelphia, PA 19104, **Phone:** (215) 898-9278, **Email:** rwwerner@mail.med.upenn.edu

Research Objective: Public reporting is a potentially powerful tool to improve health care quality. One way in which quality may improve under public reporting is by giving consumers the information necessary to choose high-quality providers. Our objectives were to test whether consumer choice of nursing homes for post-acute care changed after public reporting of nursing home quality information and whether these changes were related to patient sociodemographic characteristics.

Study Design: Using detailed information on all post-acute care admissions from the Minimum Data Set, we tested whether facility choice was related to reported facility quality after public reporting was

initiated in nursing homes in 2002. Because facility choice may be related to patients' prior beliefs about facility quality (in the absence of public reporting) as well as the new information (from public reporting), we first estimated overall prior beliefs for each facility using a conditional logit choice model during the pre-public-reporting period and estimating each facility's fixed effect. Because post-acute care quality is measured along specific domains (the proportion of patients with pain and the proportion of patients whose walking improved during their post-acute care stay) we next estimated domain-specific prior beliefs for each facility. Then, in the post-public reporting period, we estimated facility choice as a function of overall prior beliefs and the difference between domain-specific prior beliefs and the domain-specific reported score. The second term in this regression captures the "news effect" of the report card; the report card should have a significant effect on facility choice only if a facility's reported score is substantially different from the prior beliefs about that domain. We also tested the interaction between facility choice and education level to test whether consumer response to the report card information was related to sociodemographic characteristics. In all regressions we controlled for facility characteristics including profit status, bed size, occupancy, staffing, and distance between the nursing home and the patient's home.

Population Studied: All Medicare-certified nursing homes in Wisconsin between 1999 and 2005, including 180 facilities and 61,166 post-acute care admissions.

Principal Findings: Overall, for post-acute care, patients were slightly more likely to choose a post-acute care facility with higher reported quality on both pain and improved walking after public reporting was initiated. Compared to patients with more than high school education, patients with less than high school education were less likely to choose a high-quality facility both prior to and after public reporting. However, the difference in the likelihood of choosing a high-quality facility between patients with high and low education decreased after the initiation of public reporting.

Conclusions: Public reporting of post-acute care quality had a small effect on market share of nursing homes. A disproportionate response by patients with low education helped decrease—but did not eliminate-- disparities in use of high-quality facilities by education.

Implications for Policy, Delivery or Practice: A commonly held belief that only the highly educated will be able to benefit from public reporting was not substantiated by our findings. On the contrary, public reporting may be an effective (if limited) means of decreasing disparities in use of high-quality facilities.

Funding Source(s): AHRQ

Call for Panels

The Interests of the Interests: An Exploration of Needs, Goals & Strategies of Major Health Care Interests Engaged in Coverage Expansion Efforts

Walter Zelman, Ph.D.

*Sunday, June 28 * 2:30 P.M.-4:00 P.M.*

Panel Overview: At each of the last two ARM meetings I moderated panels on the politics of coverage expansions efforts. Each of the panels focused on several states whose efforts to achieve major coverage expansions were the focus of my research project. At the first of these discussions, in 2007, there was no presentation. I moderated a discussion of five researchers, each very familiar with state coverage expansion efforts in general and with one or two states in particular. The states on which we focused were California, Massachusetts, Illinois, Pennsylvania, and New York. Discussion focused on the progress or lack thereof being made in those states and the policy and political lessons to be learned from these state efforts. The following year, I moderated a panel featuring many of the same individuals and focused on the same states. However, this time, I opened the panel with a 20-25 minute presentation of research findings from my study of the five state efforts. That was followed by a panel discussion focused less on the particular presentation I made and more on the overall implications of the five state efforts for reform in other states and the national government. Discussions in both these presentations ranged over variety of topics: how issues were framed, public opinion, political leadership, processes of policymaking, matters of financing coverage expansions, the activities and impact of various stakeholder groups, etc. Both panels were very well attended and, and from all reports I received,

enjoyed and appreciated by audiences. Many commented to me that they enjoyed the political and policy analysis of researchers, and the focus on the political realities and demands of coverage expansion efforts. This year I propose something slightly different. As the nation embarks on another national effort to address the problem of the uninsured, I propose a panel discussion on the “interests of the interests.” I propose to gather a panel of individuals each of whom has unique knowledge --regarding the needs, strategies, strengths and weaknesses as a lobbying organization, bottom lines, and evolving views of the coverage expansion issue—of one of the more critical and influential stakeholders on the coverage expansion landscape. The stakeholder groups might include health plans, physician organizations, hospital organizations, labor and business organizations, consumer groups, or others. To avoid hearing too much “political spin,” I will select panelists that are not representatives of the interests selected. Rather, they will be researchers and/or policy analysts with considerable knowledge of the interest groups they are discussion. The ultimate goal will be to understand what concerns –hopefully beyond the obvious—drive those organizations, what tools they use in the process, and what combination of policies or other needs might impact how they will ultimately view anticipated coverage expansion proposals. To facilitate the discussion, I will present some data on lobbying expenditures and campaign contributions of the selected interests and some analysis of what strategies and goals lie behind those expenditures and contributions. My presentation will be relatively brief, leaving ample time for panelist analysis and questions from the audience.