ANNOTATED BIBLIOGRAPHY – SELECTED REFERENCES EXPLORING PRESCRIPTION COST-SHARING

PATIENT-PHYSICIAN COMMUNICATION AND DECISION-MAKING

1. Heisler M, Bouknight RR, Hayward RA, Smith DM, Kerr EA. The relative importance of physician communication, participatory decision making, and patient understanding in diabetes self-management. J Gen Intern Med. 2002;17:243-52.

   Survey of diabetes patients across 25 VA facilities showing that higher rates of health care provider participatory decision-making and communication led to higher diabetes self-management assessments.

2. Sherbourne CD , Hays RD, Ordway L, DiMatteo MR, Kravitz RL. Antecedents of adherence to medical recommendations: results from the Medical Outcomes Study. J Behav Med. 1992;15:447-468.

   Longitudinal study of patients with chronic medical diseases showing that baseline nonadherence, relying upon avoidant coping strategies, and distress about health led to nonadherence to medical recommendations 2 years later, while patient satisfaction with interpersonal quality, more affordable care, and social support led to adherence to medical recommendations.

3. DiMatteo MR. Patient adherence to pharmacotherapy: the importance of effective communication. Formulary. 1995;30:596-8, 601-2, 605.

   Barriers to medication adherence include side effects, polypharmacy, and cost, while facilitators of adherence include more effective communication between health care provider and patients, and patient's perception that their therapy has value.

4. Piette JD, Heisler M, Wagner TH. Cost-related medication under-use: do patients with chronic illnesses tell their doctors? Arch Intern Med. 2004;164:1749-1755.

   Nationwide survey of chronically-ill older adults who reported underuse of medication in the prior year because of cost. The study found that about one third of these chronically ill adults never talked with clinicians before they cut back on medication use and that many never discussed medication cost problems with their clinicians at all.

5. Alexander GC, Casalino LP, Meltzer DO. Patient-physician communication about out-of-pocket costs. JAMA. 2003;290:953-958.

   Survey of general internists and their patients revealing that although both patients and physicians believed that discussions of out-of-pocket costs were important, that these discussions rarely occurred.

6. Heisler ME, Wagner TH, Piette JD. Clinician identification of chronically ill patients who have problems paying for prescription medications. Am J Med. 2004;116:753-758.

   Cross-sectional survey of older adult showing that few chronically ill patients who are at risk of or experiencing problems related to prescription medication costs report that their clinicians had asked them about possible medication payment difficulties.

7. Korn LM, Reichert S, Simon T, Halm EA. Improving physicians' knowledge of the costs of common medications and willingness to consider costs when prescribing. J Gen Intern Med. 2003;18:31-37.

A study showing that a physician educational intervention designed to improve physician's knowledge of drug costs led to improvement in knowledge about medication costs and physician willingness to consider costs when prescribing medications to patients.

8. Reichert S, Simon T, Halm EA. Physicians' attitudes about prescribing and knowledge of the costs of common medications. Arch Intern Med. 2000;160:2799-2803.

Survey of internal medicine house staff and general medicine attending physicians showing that physicians were predisposed to being cost-conscious in their prescribing habits, but lacked accurate knowledge about actual costs and insurance coverage of drugs.

9. Hassell K, Atella V, Schafheutle EI, Weiss MC, Noyce PR. Cost to the patient or cost to the healthcare system? Which one matters the most for GP prescribing decision? A UK-Italy comparison. Eur J Public Health. 2003;13:18-23.

This qualitative study describes how the charge system influences the prescribing decisions of Italian and UK physicians, revealing that GP's in Italy are more able to prescribe reimbursable products while GP's in the UK have developed a larger number of cost reduction strategies due to greater variation in cost-sharing in the UK.

10. Stewart MA. Effective physician-patient communication and health outcomes: a review. CMAJ. 1995;152:1423-1433.

Systematic review of studies examining patient-physician communication and its relationship with patient health outcomes. Most studies demonstrated a positive correlation between effective patient-physician communication and improved patient health outcomes.

11. Glickman L, Bruce EA, Caro FG, Avorn J. Physicians' knowledge of drug costs for the elderly. J Am Geriatr Soc. 1994;42:992-996.

Survey of primary care practitioners regarding the price of 14 commonly used brand name and generic drugs indicating that most physicians are unaware of actual costs of many commonly prescribed medications.

12. Montemayor K. How to help your low-income patients get prescription drugs. Fam Pract Manag. Nov/Dec 2002: 51-56.

Practical discussion of some methods that physicians can use to assist low-income patients in getting prescription drugs.

13. Pham HH, Alexander GC, O'Malley AS. Physician consideration of patients' out-of-pocket costs in making common clinical decisions. Arch Intern Med. 2007;167:663-8.

Nationwide survey of physicians showing that physicians did not routinely consider patients' out-of-pocket costs when making decisions regarding more expensive medical services.

14. Wilson IB, Schoen C, Neuman P, Strollo MK, Rogers WH, Chang H, Safran DG. Physician-patient communication about prescription medication nonadherence: a 50-state study of America's seniors. J Gen Intern Med. 2007;22:6-12.

Cross-sectional survey of Medicare beneficiaries showing that physicians and patients did not routinely talk about medication cost and medication adherence.

15. Shrank WH, Fox SA, Kirk A, Ettner SL, Cantrell CH, Glassman P, Asch SM. The effect of pharmacy benefit design on patient-physician communication about costs. J Gen Intern Med. 2006;21:334-9.

Matched telephone survey of patients and their primary care physicians showing that most incentive-based enrollees were unaware of out-of-pocket costs when prescriptions were written and never discussed out-of-pocket costs with their physicians.

16. Tarn DM, Paterniti DA, Heritage J, Hays RD, Kravitz RL, Wenger NS. Physician communication about the cost and acquisition of newly prescribed medications. Am J Manag Care. 2006;12:657-64.

Surveys of patients and physicians and transcribed audiotaped office visits showing that physician-patient discussions about new medication cost and other acquisition issues, especially medication affordability, occurred infrequently.

17. Tarn DM, Paterniti DA, Heritage J, Hays RD, Kravitz RL, Wenger NS. Physician communication when prescribing new medications. Arch Intern Med. 2006;166:1855-62.

Surveys of patients and physicians and transcribed audiotaped office visits showing that physicians often failed to communicate critical elements of medication use like adverse effects and duration of medication use when initiating new medications.

ASSOCIATION BETWEEN COST-SHARING AND ACCESS OR OUTCOMES

1. Tseng C, Brook RH, Keeler E, Mangione CM. Impact of an annual dollar limit or "cap" on prescription drug benefits for Medicare patients. JAMA. 2003;290:222-227.

   Analysis of pharmacy claims from a large Medicare + Choice plan in a mature market with annual caps of $750-$2000 applied to the plan's share of prescription costs. At the less generous caps, a substantial portion of Medicare patients exceeded their annual drug benefit, facing potentially high increases in out-of-pocket costs for medications.

2. Tamblyn R, Laprise R, Hanley JA, et al. Adverse events associated with prescription drug cost-sharing among poor and elderly persons. JAMA. 2001;285:421-429.

   Interrupted time-series analysis from Quebec showing that increased cost-sharing for prescription drugs in elderly persons and welfare recipients was followed by reductions in use of essential drugs and a higher rate of serious adverse events and emergency department visits associated with these reductions.

3. Mott DA, Cline RR. Exploring generic drug use behavior: the role of prescribers and pharmacists in the opportunity for generic drug use and generic substitution. Med Care. 2002;40:662-674.

   Analysis of a database of prescription drug orders indicating that pharmacists substitute most name-brand drugs with generic drugs when possible, and that efforts to increase generic drug use should be targeted to pharmacists and prescribers.

4. Stafford RS, Radley DC. The potential of pill splitting to achieve cost savings. Am J Manag Care. 2002;8:706-12.

   Retrospective pharmacy claims analysis from a commercial managed care health plan finding that pill splitting for eligible drugs occurs infrequently and saves only a small fraction of the money that potentially could be saved.

5. Federman AD, Adams AS, Ross-Degnan D, Soumerai SB, Ayanian JZ. Supplemental insurance and use of effective cardiovascular drugs among elderly Medicare beneficiaries with coronary heart disease. JAMA. 2001;286:1732-1739.

   Cross-sectional evaluation of Medicare beneficiaries age 66 and older with a history of coronary heart disease or myocardial infarction indicating that beneficiaries who lack drug coverage have disproportionately large drug expenditures and lower rates of statin use.

6. Soumerai SB, Avorn J, Ross-Degnan D, Gortmaker S. Payment restrictions for prescription drugs under Medicaid: effects on therapy, cost, and equity. N Engl J Med. 1987;317:550-556.

   Payment restrictions for prescription drugs under Medicaid caused a drop in the number of prescriptions filled per person, especially for females and elderly or disabled individuals who received multiple drugs. Large decreases in the purchase of "essential" medications as well as "ineffective drugs" were observed.

7. Soumerai SB, Ross-Degnan D, Avorn J, McLaughlin TJ, Choodnovskiy I. Effects of Medicaid dug-payment limits on admission to hospitals and nursing homes. N Engl J Med. 1991;325:1072-1077.

   Analysis of 36 months of Medicaid claims data from New Hampshire, which had a three-drug limit per patient for 11 of those months, and from New Jersey, which did not, revealed that limiting reimbursement for effective drugs puts frail, low-income, elderly patients at increased risk of institutionalization in nursing homes and may increase Medicaid costs.

8. Steinman MA, Sands LP, Covinsky KE. Self-restriction of medications due to cost in seniors without prescription coverage. J Gen Intern Med. 2001;16:793-799.

Cross-sectional study revealing that seniors, particularly those who are minorities, who have an annual income <$10,000, and out-of-pocket prescription drug costs >$100 per month, are more likely to restrict their medications than seniors in these high-risk groups who have prescription coverage.

9. Huskamp HA, Deverka PA, Epstein AM, Epstein RS, McGuigan KA, Frank RG. The effect of incentive-based formularies on prescription-drug utilization and spending. N Engl J Med. 2003;349:2224-32.

A comparison of utilization and spending on angiotensin-converting-enzyme inhibitors, proton-pump inhibitors, and statins in employer-sponsored health plans suggested that in groups with a greater increase in cost-sharing and more restrictive formularies, more enrollees were likely to stop their medications.

10. Leibowitz A, Manning WG, Newhouse JP. The demand for prescription drugs as a function of cost-sharing. Soc Sci Med. 1985;21:1063-1069.

Randomized control trial using data from Rand Health Insurance Experiment revealed that: (1) individuals with more generous insurance buy more prescription drugs, (2) cost-sharing response for drugs is similar to the response for ambulatory medical services, (3) some sites had a great drug expenditure per capita than other sights, and (4) the proportion of brand-name drugs purchased over generic was not dependent on insurance plan.

11. Reeder CE, Nelson AA. The differential impact of copayment on drug use in a Medicaid population. Inquiry. 1985;22:396.

This study explored the influence of copayment on drug utilization, finding that there is an immediate and significant effect of copayment on the level of expenditures for all drug categories except analgesics and sedative/hypnotic drugs, and that more generally the imposition of a copayment for prescription services exerted a differential effect among therapeutic categories.

12. Heisler M, Langa KM, Eby EL, Fendrick AM, Kabeto MU, Piette JD. The health effects of restricting prescription medication use because of cost. Med Care. 2004;42:623-5.

Study showing that cost-related medication restriction among middle-aged and elderly Americans who regularly take prescription medicines was associated with an increased risk of a subsequent decline in their self-reported health status. Among those with preexisting cardiovascular disease, cost-related medication restriction was associated with higher rates of angina and nonfatal heart attacks or strokes.

13. Shrank WH, Hoang T, Ettner SL, Glassman PA, DeLapp D, Dirstine J, Avorn J, Asch SM. The implications of choice: prescribing generic or preferred formulary medications improves adherence to chronic medications. Arch Intern Med. 2006;166:332-7.

Analysis of pharmacy claims for 6 classes of chronic medications showing that prescribing generic or preferred medications within a therapeutic class was associated with improvements in adherence to therapy.

14. Taira DA, Wong KS, Frech-Tamas F, Chung RS. Copayment level and compliance with antihypertensive medication: analysis and policy implications for managed care. Am J Manag Care. 2006;12:678-83.

Analysis of claims data showing that copayment level, independent of other determinants, was found to be a strong predictor of compliance with antihypertensive medications, with greater compliance seen among patients filing pharmacy claims for drugs that required lower copayments.

15. Rector TS, Finch MD, Danzon PM, Pauly MV, Manda BS. Effect of tiered prescription copaymentt on the use of preferred brand medications. Med Care. 2003;41:398-406.

Longitudinal logistic regression analyses of pharmacy claims showing that tiered prescription copayments were associated with a significant shift from nonpreferred to preferred brand medications.

16. Huskamp HA, Epstein AM, Blumenthal D. The impact of a national prescription drug formulary on prices, market share, and spending: lessons for Medicare? Health Aff. 2003;22:149-58.

Study showing that VHA National Formulary was effective at shifting prescribing behavior, achieving sizable price reductions from manufacturers, and greatly decreasing drug spending in a population with a large proportion of elderly and disabled people.

17. Goldman D, Joyce GF, Escarce JJ, Pace JE. Solomon MD, Laouri M, Landsman PB, Teutsch SM. Pharmacy benefits and the use of drugs by the chronically ill. JAMA 2004;291:2344-2350.

Retrospective study linking claims data with health plan benefit designs showing that the use of some medications such as antihistamines, NSAIDS, antihypertensive, antiasthmatic, antidepressant, antihyperlipidemic, antiulcerant, and antidiabetic agents, showed significant price responsiveness. However, reduction in medication use for subgroups with identifiable chronic illness was more modest.

18. Goldman DP, Joyce GF, Lawless G, Crown WH, Willey V. Benefit design and specialty drug use. Health Aff. 2006;25:1319-31.

Analysis of claims data showing that increased cost sharing for specialty products did not reduce utilization and overall health care spending dramatically and transferred the larger financial burden to the patient. Specialty drug use was largely insensitive to cost sharing.

19. Braithwaite RS, Rosen AB. Linking cost sharing to value: an unrivaled yet unrealized public health opportunity. Ann Intern Med. 2007;146:602-5.

Discussion on the appropriate and inappropriate settings for cost-sharing and the use of cost-effectiveness analysis as an objective method to estimate the value of health services and as a systematic evaluation of the appropriateness of cost-sharing policies.

20. Huskamp HA, Deverka PA, Epstein AM, Epstein RS, McGuigan KA, Frank RG. The effect of incentive-based formularies on prescription-drug utilization and sepdning. N Engl J Med. 2003;349:2224-32.

Analysis of claims data showing that a change in formulary administration, whether increasing copayments for top tier drugs or for all medications, affected utilization, spending, and even lead to discontinuation of therapy.

21. Goldman DP, Joyce GF, Karaca-Mandic P. Varying pharmacy benefits with clinical status: the case of cholesterol-lowering therapy. Am J Manag Care. 2006;12:21-8.

Study using claims data and a benefit-based-copayment model that varied by clinical status showing that strategically varying copayments for cholesterol-lowering therapy by therapeutic need could improve overall compliance and reduce use of other expensive services like hospitalizations and emergency department use.

22. Garber AM. Cost-effectiveness and evidence evaluation as criteria for coverage policy. Health Aff. 2004;W4:284-96.

Discussion describing the role of evidence-based criteria in formal coverage decision making, differentiating these criteria from cost-effectiveness criteria, and incorporating cost-effectiveness into coverage policy and benefit design.

HEATH POLICY AND THE MEDICARE MODERNIZATION ACT

1. Safran DG, Neuman P, Schoen C, Montgomery JE, Li W, Wilson IB, Kitchman MS, Bowen AE, Rogers WH. Prescription drug coverage and seniors: how well are states closing the gap? Health Aff. 2002;W253-68.

   Survey of seniors in eight states that finds marked differences among states in the percentage of seniors with coverage and in the sources providing coverage, and that classifying beneficiaries as either having coverage or not misses major differences in depth of coverage, with some sources of coverage appearing only marginally better than no coverage at all.

2. Rector TS. Exhaustion of drug benefits and disenrollment of medicare beneficiaries from managed care organizations. JAMA. 2000;283:2163-2167.

   Retrospective cohort study of elderly Medicare beneficiaries in 4 health plans found that likelihood of exhausting drug benefits ranged from 17-25% and that exhaustion of benefits was associated with an increase in the likelihood of health plan disenrollment by Medicare beneficiaries (relative hazards of disenrollment ranged from 1.9-2.7).

3. Bodenheimer TS. Affordable prescriptions for the elderly. JAMA. 2001;286:1762-1763.

   Although elected officials have cut the Medicare prescription drug benefit to only $300 billion over the next 10 years, the Congressional Budget Office projects that drug expenditures for this population will exceed $1.3 trillion over that time period. Prescription drug price increases, increases in the number of prescriptions written per person, and the replacement of less expensive drugs with more expensive drugs all make it more difficult for the elderly to afford the medications they need.

4. Mojtabai R, Olfson M. Medication costs, adherence, and health outcomes among Medicare beneficiaries. Health Aff. 2003;22:220-229.

   Poor adherence to drug treatment regimens in elderly patients is associated with low or no partial medication coverage, poorer health, higher rates of hospitalization, low income, and high out-of-pocket drug spending. This knowledge should help to inform the design of the Medicare prescription drug benefit.

5. Doherty RB. Assessing the new Medicare prescription drug law. Ann Intern Med. 2004;141:391-395.

   An explanation of the Medicare Modernization Act and how it is impacted by policy decisions make by the U.S. Congress, private health plan options, and drug benefit on beneficiaries with different incomes. As well, it is argued that both claims by critics and proponents of the law should we cautious, as it is impossible to predict how a law of such complexity, with so many human variables, will work out in the end.

6. Cubanski J, Kline J. A medicare prescription drug benefit: focusing on coverage and cost. Commonw Fund, Issue Brief (#538), April, 2002.

   Issue brief highlighting shortcoming of traditional Medicare benefits package given exclusion of coverage for outpatient prescription drugs. Argument that omission significant because the over 38 million Medicare beneficiaries are disproportionately more likely to use drugs, representing 14% of the population but accounting for more than one-third of overall drug expenditures.

7. Iglehart JK. Medicare and prescription drugs. N Engl J Med. 2001;344:1010-1015.

An analysis of Medicare benefits, and how they relate to the rising costs of prescription drugs, expansion of private coverage, reform measures, Congressional decisions, President Bush's two-stage Medicare strategy, and democratic alternatives.

8. Rosen AB, Hamel MB, Weinstein MC, Cutler DM, Fendrick AM, Vijan S. Cost-effectiveness of full Medicare coverage of angiotensin-converting enzyme inhibitors for beneficiaries with diabetes. Ann Intern Med. 2005;143:89-99.

Markov model study showing that Medicare first-dollar coverage (no cost sharing) of angiotensin-converting enzyme (ACE) inhibitors for beneficiaries with diabetes could extend life and reduce Medicare program costs.

9. Neumann PJ, Rosen AB, Weinstein MC. Medicare and cost-effectiveness analysis. N Engl J Med. 2005;353:1516-22.

Discussion on using cost-effectiveness analysis in the Medicare program to target health care resources more efficiently.

Annotated bibliography assembled by Maliha Darugar for workshop at SGIM 2005 Annual Meeting, "Clinical decision-making in the era of prescription cost-sharing", presented by GC Alexander, JD Piette, and IB Wilson. Updated by Hannah Park in April 2007.