Testimony of
Allan Coukell, BSc (Pharmacy)
Director of Policy
The Prescription Project
Community Catalyst

Before the Senate Special Committee on Aging
March 12, 2008

Good morning, Mr. Chairman, Senator Smith and members of the Committee. My name is Allan Coukell. I am the Director of Policy for the Prescription Project, which is funded by The Pew Charitable Trusts to promote appropriate prescribing and address the conflicts of interest in medicine caused by pharmaceutical industry marketing.

I appreciate the opportunity to appear before you today to discuss the prescriber education programs known as academic detailing, and particularly the cost impact of such programs.

Academic detailing provides prescribers with unbiased information, encouraging the use of the safest, most effective and – other things being equal – least costly drugs. Cost savings in this context means savings for patients, for public and private insurers and for taxpayers, whether or not they take medication.

Arkansas, New Hampshire, Vermont, D.C. Medicaid Study

I'd like to begin with an important estimate: that for every dollar spent on an academic detailing program, two dollars can be saved in drug costs. This number is from an economic model[1] developed by Dr Avorn's group, and based on real-world effectiveness data.

The original well-designed study in the *New England Journal of Medicine*[2] compared the prescribing of doctors who were offered education visits with those who were not. These were doctors in the Medicaid programs of Arkansas, New Hampshire, Vermont or the District of Columbia, and the study showed that educational visits substantially and significantly reduced the number of prescriptions for three often over-used drugs.[a]

That change in prescribing equated with a decrease in costs of about 20 thousand dollars for 141 doctors, more than enough to offset the cost of running the program.[b] And those are savings were only for the first year of the program, and only to Medicaid, even though doctors also saw patients with other types of coverage. The real savings were almost certainly higher.

---

[a] n = 435; intention-to-treat analysis; reduction in units prescribed after education visit: cephalexin (p = 0.0006), propoxyphene (p = 0.04), papaverine (p = 0.02), all three drugs (p = 0.0001).
[b] Savings of $105 per prescriber over the 9-mo study. Estimated year one savings = $19,740. Cost per physician visit about $100.

The researchers then modeled an expansion to a full-scale program involving ten thousand doctors a year, making projections for staffing and duration of effects. They concluded, as I've said, a most-likely benefit-to-cost ratio of nearly 2 to 1.[c]

It is important to note that the cost of prescription drugs has increased much more rapidly than the costs of labor since this early 1980s study. Medications that seemed expensive then would today be considered a bargain. That suggests even greater potential savings.

Pennsylvania PACE Analysis

Next, I'd like to turn to recent data from the PACE program in Pennsylvania.[3] Although the program focuses on several classes of drugs, this is an analysis of just one class – the so-called "little purple pill" for acid-reflux and its cheaper, equally effective cousins.

The analysis shows reduced drug costs of about $120 per doctor per month.[d] Among the heaviest prescribers, the reduction was $378 per doctor per month. If these changes in prescribing persist for a year, they would equate to cost savings of $572 thousand, against total program costs of about $1 million.

It is important to point out that these are savings only for a single class of drugs,[e] and only for patients in the PACE program, who make up just a fraction of the caseload for any physician. In all likelihood, savings in other drug classes and savings to other programs, including Medicaid, Medicare Part D, state employees and private plans, would more than offset the cost of running the program.

Australian Experience

Academic detailing programs are extensively used in other countries, particularly in Australia and Canada.[4] While both of those countries have healthcare systems that differ from ours, it is important to point out that prescription drugs in those countries are, in general, considerably less expensive than here in the United States. That may suggest the potential for even greater savings here.

In Australia, the National Prescribing Service program generated net savings of 300 million Australian dollars over ten years on visits with 11,500 prescribers contracts.[5, f]

---

[c] Cost-benefit 1.8:1, assuming detailers see average 5.4 physicians per day in the field and behavior change effects decay to zero in year 2.

[d] Comparing the seven months before and after the educational intervention, reductions were $122 per doctor per month compared with "control" doctors in the same country who did not receive educational visits ($p = 0.05$). Compared controls in other counties, the reduction was $124 ($p = 0.09$).

[e] As of mid-2007, drug information consultants in this program had met with 716 physicians on a range of topics and several classes of drugs.

[f] Over a nearly ten-year period (1997-2005), estimated savings have consistently been greater than budgeted. In 2006-2007, 11,500 individual GPs voluntarily participated in NPS core activities, which reflects a steady increase from 2,500 participants in 1998–99.

Other published studies

Time won't permit a thorough review of every published economic analysis, but a table attached to my written testimony summarizes the literature. In general, I would emphasize that academic detailing programs consistently change prescribing behavior, and do it better than other approaches.[6,g] Published studies of generally small programs tackling only one or a small number of drugs generally reflect the potential for savings.

Potential savings

In terms of broader potential savings, we'd point out that optimal use of generics[h] would alone produce national savings of about $8.8 billion dollars per year.[7]

Looking only at high blood pressure, the evidence shows that for most patients the first choice drug should be an inexpensive thiazide diuretic instead of one of several new, expensive and heavily marketed drugs. The potential US saving from appropriate use of thiazides is estimated at $433 million a year.[8] And there published evidence shows that academic detailing drive this shift in a cost-effective way.[9]

This illustrates the potential savings from appropriately applying information on the comparative effectiveness of drugs. But as the Congressional Budget Office recently noted,[10] any potential savings are realized only when the information is translated into changes in clinical practice. That is what academic detailing helps to achieve.

Finally, it must be pointed out that all of the analyses I have discussed today focus on potential savings within the drug budget. Yet this misses an area of even greater potential cost savings – the potential to prevent disease. Such analyses are harder to conduct, but imagine the healthcare savings when a change in prescribing avoids just one heart attack or prevents a broken hip by getting an elderly person off an inappropriate sedative.

One study of academic detailing showed enormous savings by preventing gastrointestinal bleeds.[11,i] Another, in heart failure,[12] estimated a net cost of about twenty-five hundred dollars per year of life gained.[j] That is a low price to pay to give someone an extra year of life.

Conclusion

In conclusion, I would like to thank the Aging Committee for examining this important issue. The federal government has long been the major funder of graduate medical education for doctors. Medicare Part D means the government now also pays an

---

[g] See also Bloom for a discussion of individual education visits compared with practice guidelines and didactic presentations.

[h] Based on data from a nationwide representative survey of the US population, generics account for 56% of all prescriptions – far lower than the 75-80% rate achieved in many of the best programs. The $8.8b is in year 2000 dollars.

[i] For more detail, see appended table.

[j] $2602/life-year gained

enormous share of drug costs. We are pleased that this committee sees the potential to extend the federal role in physician education, to save lives and save taxpayer dollars.

Appendix

Assessing the cost impact of educational outreach programs is challenging. [13,14] The term "academic detailing" is used inconsistently across studies and programs. Therefore, comparison across studies is difficult. Experienced practitioners attest that the success of a program depends on the program focus and the training and skill level of the clinical educators. Longer running programs, where physicians and educators develop trusting relationships may be expected to increase the effectiveness of the intervention. However, most academic studies are short-term initiatives. Limited conclusions may be drawn from studies where failure to demonstrate a cost impact was secondary to failure to change behavior.

For a discussion of individual education visits compared with practice guidelines or didactic presentations, see Bloom.[15]

Table: Published studies evaluating the economic impact of academic detailing.

Study	Setting	Design/ Intervention	Change in prescribing/ clinical care	Cost impact	Comments
Randomized controlled trials					
Freemantle et al.[16] Mason J et al.[17]	UK General practice	Educational visits by community pharmacists on 4 disease/drug topics *vs.* no visit	Educational outreach produced 5.2% increase in patients treated within recommendations	Cost-effectiveness: ACE inhibitor for CHF $2602 / YLG Tricyclic antidepressant instead of SSRI: cost of outreach exceeds savings ($82 v $75)	As anticipated, encouraging the use of an ACE inhibitor increased drug costs. However, such therapy is life-prolonging and the authors conclude that the educational intervention is cost-effective.
Franzini et al.[18]	Houston, TX Pediatrics, family medicine private practices	Education on immunization or control (n = 186)	3-5% increase in immunization rates *vs.* control (NS)	Intervention cost $424-550 per 1% increase in immunization	Authors conclude this cost is higher than potential societal savings.
Freitheim et al.[19]	Norway, General practice	Practices received educational outreach visit on hypertension treatment (n = 70) or control (n = 69)	Thiazides prescribed to 17% *vs.* 11% in intervention, control group, respectively	Cost per additional patient started on thiazides = $454	Authors conclude intervention is cost effective. Net annual savings of a national program estimated at $761,998.
Ofman et al.[20]	Orlando, FL Managed care org.	Disease management program for acid-related diseases, including academic detailing (n =	Use of recommended regimen 96% *vs.* 10% (p = 0.001); discontinuation of PPI therapy: 70% *vs.* 26% (p = 0.04)	No difference in total costs over 6 mos	Cost savings on pharmaceuticals offset by increased testing for H. pylori bacteria, a clinically appropriate outcome.

		83)			Authors report improved process measures and some outcomes through a cost-neutral intervention.
Simon et al.[21]	Harvard Community Health Plan (New England) HMO	Retrospective cost analysis of education about blood pressure treatment: mailed information (control) *vs.* individual *vs.* group academic detailing (n = 9 practices)	Both individual and group detailing improved prescribing of desired drugs (individual more than group)	Estimated net yearly cost reduction per *vs.* mailed info: Individual outreach $20.37 Group outreach = no change	Individual detailing more cost effective than mail or group visits, despite higher intervention costs. Extrapolated to plan level, estimated potential net savings of $155,000 for antihypertensive therapy.
Quasi-experimental studies					
Coopers & Lybrand[22]	Australia General practitioners/ specialist	Educational visits with focus on NSAID use (n=210)	28% reduction in dispensing compared with control group (see[23]) 70% reduction in hospital admissions for GI disorders compared with controls	Net direct benefit, including hospitalizations avoided = $745,000 to $1,028,000 (Discounted value $675,000 to $932,000)	Improved health outcomes (gi bleeds avoided) had a greater economic impact than reduced drug costs, but drug savings alone approx equal to project costs.
Hill et al.[24]	Major Midwestern HMO	Peer-to-peer education visits focus on antihistamines, lipid lowering and antibiotic use (n = 254 physicians *vs.* 409 in control group)	Assessed total cost of prescribing	Total pharmaceutical costs increased 0.9% *vs.* 2.9% in controls, corresponding to $232,218 savings over 6 mos	Authors estimate a return on investment of 14.4% to 281% for a large-scale program.
Keys et al.[25]	Pennsylvania PACE program	Pharmacist education of physicians identified through review of prescriber profiles (n = 254)	Assessed total cost of prescribing	Academic detailing by 6 part-time pharmacists saved more than $12,000/mo in the 3 mo after implementation	Program run by commercial contractor focusing on high-cost prescribing patterns. Savings to cost ratio estimated at 4:1
Regier [26]	Saskatchewan, Canada. Primary care	Educational visits on NSAID prescribing (n = 56)	Total number of prescriptions increased slightly in intervention group.	7.4% decrease in cost per NSAID prescription among doctors who received visits.	City-wide decrease in cost of Can$42,725 for this class of drugs *vs.* an increase of $179,933 in a comparator city.

Abbreviations:
ACE inhibitor = a class of drugs used to treat hypertension and heart failure;

CHF = congestive heart failure;
mo = month;
mos = months;
n = the number of physicians (or physician practices) in the study, or the number assigned to receive educational visits;
NS = not significant;
NSAID = non-steroidal anti-inflammatory (the class of pain relievers that includes ibuprofen)
PPI = proton pump inhibitor (the class of acid-reducing drugs that includes Nexium and Prilosec);
SSRI = selective serotonin reuptake inhibitor (the class of antidepressants that includes Prozac);
YLG = year of life gained.

---

[1] Soumerai, S. B., & Avorn, J. (1986). Economic and policy analysis of university-based drug "detailing". *Medical Care, 24*(4), 313-331

[2] Avorn JA, Soumerai SB. Improving drug-therapy decisions through educational outreach: a randomized controlled trial of academically based “detailing”. *New Eng J Med* 1983; 308: 1457-1463

[3] Independent Drug Information Service & Pennsylvania Department of Aging. Evaluation of the Independent Drug Information Service, the Pennsylvania Academic Detailing Program: acid-suppressing therapy module. July 2007 (Draft report)

[4] Maclure M et al. Show me the evidence: best practices for education visits to promote evidence-based prescribing. Canadian Academic Detailing Collaboration / Drug Policy Futures (report) 2006.

[5] National Prescribing Service. Evaluation Report No. 10. Dec 2007

[6] O'Brien MA et al. Educational outreach visits: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD000409. DOI: 10.1002/14651858.CD000409.pub2

[7] Haas J et al. Potential Savings from Substituting Generic Drugs for Brand-Name Drugs: Medical Expenditure Panel Survey, 1997-2000. *Ann Intern Med* 2005; 142: 891-897

[8] Fretheim A, Aaserud M, Oxman AD. The potential savings of using thiazides as the first choice antihypertensive drug: cost-minimisation analysis. BMC Health Serv Res. 2003 Sep 8;3(1):18.

[9] Simon SR, Rodriguez HP, Majumdar, SR, et al. Economic analysis of a randomized trial of academic detailing interventions to improve use of antihypertensive medications. *Journal of Clinical Hypertension (Greenwich, Conn.),* 2007; *9*(1): 15-20

[10] Congressional Budget Office. Research on the comparative effectiveness of medical treatments. Dec 2007.

[11] Coopers & Lybrand Consultants. Drug and Therapeutics Information Service: Update of the economic evaluation of the NSAID project (report) 1996

[12] Mason J et al. When is cost-effective to change the behavior of health professionals? *JAMA*. 2001; 286(23): 2988-2992

[13] Maclure M. et al. Measuring prescribing improvements in pragmatic trials of educational tools for general practitioners. Basic and Clinical Pharmacol and Tox 2006; 98: 243-252

[14] Gandjour A, Lauterbach KW. (2005). How much does it cost to change the behavior of health professionals? A mathematical model and an application to academic detailing. *Medical Decision Making : An International Journal of the Society for Medical Decision Making, 25*(3), 341-347

[15] Bloom BS. Effects of continuing medical education on improving physician clinical care and patient health: a review of systematic reviews. Int J Tech Assessment 2005; 21(3): 380-385

[16] Freemantle N. et al. A randomized controlled trial of the effect of education outreach by community pharmacists on prescribing in UK general practice. *Br J Gen Practice* 2002 (Apr): 290-295

[17] Mason (2001) ibid.

[18] Franzini, L et al. Cost-effectiveness analysis of a practice-based immunization education intervention. *Ambulatory Pediatrics : The Official Journal of the Ambulatory Pediatric Associatio (2007); 7*(2): 167-175

[19] Fretheim A, Aaserud M, Oxman AD. Rational Prescribing in Primary Care (RaPP): Economic Evaluation of an Intervention to Improve Professional Practice *PLoS Medicine* Vol. 3, No. 6, e216 doi:10.1371/journal.pmed.0030216

[20] Ofman, J. J., Segal, R., Russell, W. L., Cook, D. J., Sandhu, M., Maue, S. K., et al. (2003). A randomized trial of an acid-peptic disease management program in a managed care environment. *The American Journal of Managed Care, 9*(6), 425-433

[21] Simon SR ibid

[22] Coopers & Lybrand Consultants. ibid

[23] May FW et al. Outcomes of an educational outreach service for community medical practitioners. *MJA* 1999; 170: 471-474

[24] Hill, C. D., Bunn, D. N., & Hawkins, J. R. Stretching the managed care dollar in the new millennium: The practice of detailing primary care physicians. *Managed Care Quarterly, 10*(2), 18-23.

[25] Keys PW, Goetz CM, Keys PA, et al. Computer-guided academic detailing as part of a drug benefit program. *American Journal of Health-System Pharmacy : AJHP* 1995; *52*(20): 2199-203

[26] Regier, L. Preliminary drug utilization evaluation: NSAIDs. Saskatoon District Health Community Drug Utilization Program (1999)