
... LETTERS TO THE EDITOR ...

TO THE EDITOR:

I am grateful to Gouveia and Shane for their thoughtful review of the value of pharmacists in the healthcare marketplace.¹ Often the potential use of pharmacists in the role of physician extenders is underestimated or totally overlooked by managed care organizations and health-care agencies. This is unfortunate for providers and patients alike. One need only consider pharmacy practice in the days of the corner pharmacy in small towns or the primary care services provided for decades by pharmacists

Table 1. Benefit/Cost (B/C) Ratio of Cognitive Pharmacist Services

Ambulatory	B/C Ratio	Institutional	B/C Ratio
General	3.2 ⁹	Nursing Home	7.0 ¹⁹
General	7.2 ¹⁰	Hospital Med/Surg	6.0 ²⁰
Anticoagulation	6.5 ¹¹	Hospital Med	9.1 ²¹
Hypertension	2.5 ¹²	Gentamicin PK	8.7 ⁴
General	2.3 ¹³	Heparin PK/PD	5.5 ⁵
Family Practice	6.0 ¹⁴	Indomethacin PK/PD	0.9-3.2 ⁷
Asthma	11.7-26.0 ¹⁵	Ciprofloxacin PK/PD	≥3.6 ⁶
Hypertension	2.8-4.2 ¹⁶	Cefmenoxime PK/PD	>1.9 ⁷
Hypertension	1.6 ¹⁷		
Diabetes	7.8 ⁸		
Smoking Cessation	1.7-4.5 ¹⁸		

*Unpublished data

&ASHP Newsletter 1996;29:2

PK=pharmacokinetics; PD=pharmacodynamics

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in the Indian Health Service to demonstrate the ability of pharmacists to collaborate with physicians to provide primary care. Furthermore, pharmacists have proven to be unique physician extenders due to the considerable drug expertise they impart, and are highly cost effective when subjected to short-term benefit vs cost analysis (Table 1).

Particularly overlooked in this scenario are the community pharmacy practitioners. These individuals not only dispense drugs, but in many settings, offer health-care advice and reassurance that provides relief and prevents physician office or urgent care visits.² Community pharmacists can support managed care programs in a multitude of ways, including chronic disease management and prevention of physician office visits for such acute problems as viral upper respiratory infections, follow-up of acute problems such as otitis media, and treatment programs for diseases involving over-the-counter drug use. A recent study³ of prescriptions filled in 89 pharmacies in 5 states showed that 1.9% of the 33,011 prescriptions had problems, many of which could result in patient harm. Prevention of these problems saved sufficient healthcare costs to make the value of the pharmacist per prescription filled equal to \$2.32 for their cognitive functions. Lastly, the training of pharmacists in the area of pharmacokinetic and pharmacodynamic drug dosing services can have a major impact on costs. While laboratory expenses add to the initial cost of care, the subsequent reduction in resource utilization through accelerated response or reduced toxicity makes these unique services very cost effective (Table 1).^{4,7}

Placing pharmacist cognitive services reimbursement in the realm of PBMs has had disappointing results.⁸ This is not surprising when pharmacy input is undervalued, and inadequate reimbursements are provided for pharmacists to police prescribing rather than provide direct patient care

Alternately, managed care and other healthcare programs that have utilized pharmacists in appropriate patient care roles have seen substantial reductions in healthcare resource utilization. *ASHP Newsletter* 1996; 29:2^{4,7,9-21}

Consumers value pharmacists—note the top ratings in Gallup polls asking the public about trusted professions. It is to the benefit of all parties—ie, healthcare agencies, patients, and pharmacists—to incorporate pharmacists more extensively into patient care and reimburse appropriately for these functions. Pharmacy educators must then support training needs to meet these professionals' demands.

Hopefully, Gouveia and Shane have prompted managed care organizations to better appreciate the scope of pharmacist contributions and the additional information in this letter will clarify why it is cost-effective to do so. If

the issues for managed healthcare organizations are cost, access, and quality, pharmacists offer exceptional value as physician extenders. Hopefully, appropriate reimbursement policies to motivate pharmacists to create disease state management programs will be forthcoming.

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1. Gouveia WA, Shane R. The three dimensions of managed care pharmacy practice. *Am J Man Care* 1997;3:231-239.
2. Muirhead G. Chain PGM moves forward selling pharmaceutical care. *Drug Topics* 1997;3:45.
3. Rupp MT. Value of community pharmacists' interventions to correct prescribing errors. *Ann Pharmacother* 1992;26:1580-1584.
4. Bootman JL, Wertheimer AI, Zaske D, Rowland C. Individualizing gentamicin dosage regimens in burn patients with gram-negative septicemia: A cost-benefit analysis. *J Pharm Sci* 1979;68:267-272.
5. Groce JB, Gal P, Douglas JB, and Steuterman MC. Heparin dosage adjustment in patients with deep-vein thrombosis using heparin concentrations versus activated partial thromboplastin time. *Clin Pharmacy* 1987;6:216-222.
6. Forrest A, Nix DE, Ballow CH, Goss TF, Birmingham MC, et al. Pharmacodynamics of intravenous ciprofloxacin in seriously ill patients. *Antimicrob Agents Chemother* 1993;37:1073-1081.
7. Paladino JA, Fell RE. Pharmacoeconomic analysis of cefmenoxime dual individualization in the treatment of nosocomial pneumonia. *Ann Pharmacother* 1994;28:384-389.
8. Muirhead G. Walking the talk: RPhs not stepping up to cognitive pay programs. *Drug Topics* 1997;3:81-82.
9. Borgsdorf LR, Miano JS, Knapp KK. Pharmacist-managed medication review in a managed care system. *Am J Hosp Pharm* 1994;51:772-777.
10. Fortner CR, Tarrant J, Felton HF. Report on an ambulatory clinical pharmacy program and its cost effectiveness. *Group Health J* 1985;6:3-6.
11. Gray DR, Garabedian-Ruffalo SM, Chretien SD. Cost-justification of a clinical pharmacist-managed anticoagulation clinic. *Drug Intell Clin Pharm* 1985;19:575-580.
12. Morse GD, Douglas JB, Upton JH, Rodgers S, Gal P. Effect of pharmacist intervention on control of resistant hypertension. *Am J Hosp Pharm* 1986;43:905-909.
13. Hatoum HT, Witte KW, Hutchinson RA. Patient care contributions of clinical pharmacists in four ambulatory care clinics. *Hosp Pharm* 1992;27:203-209.

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14. Jameson J, VanNoord G, Vanderwoud K. The impact of a pharmacotherapy consultation on the cost and outcome of medical therapy. *J Fam Pract* 1995;41:469-472.
15. Pauley TR, Magee MJ, Cury JD. Pharmacist-managed, physician-directed asthma management program reduces emergency department visits. *Ann Pharmacother* 1995;29:5-9.
16. McKenney JM, Slining JM, Henderson HR, Devins D, Barr M. The effect of clinical pharmacy services on patients with essential hypertension. *Circulation* 1973;XLVIII:1104-1111.
17. McKenny JM, Brown ED, Necsary R, Reavis L. Effect of pharmacist drug monitoring and patient education on hypertensive patients. *Contemp Pharm Report* 1978;1:50-56.
18. McGhan WF, Smith MD. Pharmacoeconomic analysis of smoking-cessation interventions. *Am J Health-Syst Pharm* 1996;53:45-52.
19. Thompson JF, McGhan WF, Ruffalo RL, et al. Clinical pharmacists prescribing drug therapy in a geriatric setting: Outcome of a trial. *J Am Ger Soc* 1984;32:154-159.
20. Bjornson DC, Hiner WO, Potyk RP, et al. Effect of pharmacists on health care outcomes in hospitalized patients. *Am J Hosp Pharm* 1993; 50:1875-1884.
21. Yee DK, Veal JH, Trinh B, Bauer S, Freeman CH. Involvement of HMO-based pharmacists in clinical rounds at contract hospitals. *Am J Health-Syst Pharm* 1997;54:670-673.