

Editorial Response: Medicare and Outpatient Therapy for Infectious Diseases

Civilized nations provide economic and medical security for the poor, the disabled, and the elderly. In 1965, the United States put into law the system of Medicare, by which payment is guaranteed for medical services delivered to citizens ≥ 65 years of age. Currently, 38 million United States citizens are covered by Medicare, which has an annual budget of \sim \$180 billion. The budget for Medicare is administered by the Health Care Financing Agency (HCFA).

For patients with Medicare insurance, primarily inpatient charges are covered. In 1983, HCFA abandoned the fee-for-service payment of hospital charges and mandated a prospective plan for payments based on specific diagnosis-related groups (DRGs). As a result of this financial incentive, lengths of stay in hospitals were reduced and outpatient activities enlarged. Currently, Medicare covers hospital care for up to 90 days, skilled-nursing-facility care for up to 100 days, and some home health care. No prescription drugs are covered, however.

See article by Tice et al. on pages 1415–21.

Recently, Medicare—like other insurers—has reacted to new cost concerns. Under the Balanced Budget Act of 1997, HCFA's authority to contract with managed care plans expanded. The latter changes included three options for coordinated health care: Health Maintenance Organizations (HMOs), Preferred Provider Organizations (PPOs), and Provider-Sponsored Organizations (PSOs). Unlike the traditional Medicare plan, ambulatory care services are covered by Medicare HMOs, which have only $\sim 10\%$ of the Medicare market. This fact may seem surprising since, in the treatment of many common infectious diseases, outpatient iv therapy precludes expensive hospitalization or the available but inconvenient option of daily visits to a physician's office for iv therapy. Surely, most patients appreciate the comfort of being out of the hospital. Thus, there appears to be a mismatch with what has been shown to be cost-effective and what is a government policy.

Tice and colleagues, in this issue of *Clinical Infectious Diseases*, challenge Medicare to cover the costs of self-administered iv antibiotic therapy, arguing that the government agency could save up to \$1.5 billion in the first 5 years [1]. The authors point out that the U.S. House and Senate Appropriations Committee, which is interested in this issue, requested from HCFA a cost-effectiveness study of outpatient iv therapy for Medicare

patients. Subsequently, both the Infectious Diseases Society of America and Hoffman-LaRoche commissioned the authors to conduct a similar study.

The authors studied four infections: cellulitis, pneumonia, endocarditis, and osteomyelitis. The former two accounted for $>300,000$ admissions each in 1995 and the latter two for $>27,000$ admissions combined. These numbers are valid since they are based on $\sim 650,000$ Medicare hospitalizations from the 1995 Medicare Provider Analysis and Review (MEDPAR) file. MEDPAR was also used to determine the lengths of stay for each condition.

Tice and colleagues show that almost all of the iv therapy for cellulitis or pneumonia occurs in the hospital, but 50% of the 1-month therapy for either endocarditis or osteomyelitis occurs after discharge. Presumably, the approximately 15-day outpatient iv therapy occurs with daily visits to a physician's office, at much inconvenience to patients. The estimated costs in the model are reasonable, and most of the savings result from fewer hospitalizations and reduced hospital stays per admission.

Who are the major winners in the proposed change in Medicare coverage? Surely, Medicare would reduce its costs and improve its bottom line. Those who have been anxious about Medicare's becoming bankrupt in the future might also find some comfort with such a new policy. Under the Balanced Budget Act the Medicare trust fund is expected to be solvent until ~ 2010 . Second, those physicians and medical companies providing home iv therapy could also be financial beneficiaries of such a change. Naturally, they would be enthusiastic supporters.

Third, the authors argue that hospitals would benefit under the Medicare DRG system since there would be financial incentives for earlier discharge. However, the new cost-reduction rules that were adopted on 1 July 1998 may cost hospitals more money in their management of Medicare-covered cases [2]. Specifically, under the new rules, Medicare will penalize hospitals that discharge certain types of patients too quickly to nursing homes, where many elderly patients reside. The latter practice is common in hospitals given a fixed fee ("capitated") for patient care, since the financial incentives work to promote brief hospital stays.

An additional fact that Medicare also announced in January 1998 is that it would reduce its bill for home care by \$16 billion over the next 5 years [2]. How that would relate—if at all—to home iv antibiotic therapy is unclear. The point is that currently there is great flux in national policies for medical care reimbursement, and hospitals may not see great savings.

It is always assumed that patients and their families prefer home or outpatient treatment to hospital-based therapy. For most this is likely, but for others there could be some added stress. For example, the worried spouse of an elderly, frail patient getting home iv therapy for endocarditis may be asked

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Reprints or correspondence: Dr. Richard P. Wenzel, Chairman, Department of Internal Medicine, Medical College of Virginia, 1001 East Broad Street, Suite 405, Richmond, Virginia 23219.

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to give nursing care for which he or she is not well-prepared, physically or emotionally. Furthermore, copays required for outpatient therapy may strain the budgets of some elderly patients on fixed incomes. Additional home nursing costs may be encountered. In essence, Medicare would transfer its costs to the elderly. We suspect that this is not a trivial issue.

For the most part, iv antibiotics have been developed with the inpatient setting in mind. Little thought has been given to the inconvenience associated with frequent dosing or complex combination therapy. Outpatient iv therapy necessarily requires us to view this as a refreshing and long-overdue change in perspective. However, physicians must resist the desire to enhance patient convenience at the expense of health outcomes. Very costly antibiotics, vancomycin, and very broad-spectrum agents must be reserved for situations where no lesser agent will suffice.

An enormous change in costs of therapy for infections could also result if oral antibiotics replaced iv drugs as effective therapy. Although it may be decades before oral antibiotics are available to treat endocarditis, this infection led to only 10,685 Medicare admissions in 1995. In contrast, for cellulitis

(~330,000 admissions) and pneumonia (~315,000 admissions) there could be available oral antibiotics in the next 5 years for most patients, with enormous cost savings.

In summary, Tice and colleagues have used reasonable estimates for their cost model of treating common infectious diseases with outpatient iv antibiotic therapy. Medicare would clearly be the beneficiary of such a proposed policy, and most affected patients would applaud its convenience. Hospitals may not be major beneficiaries of such a policy, and there may be added financial and emotional burdens for some elderly patients.

Richard P. Wenzel and Mary D. Nettleman

*Department of Internal Medicine, Virginia Commonwealth University,
Medical College of Virginia, Richmond, Virginia*

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