



Follow the Money — Controlling Expenditures by Improving Care for Patients Needing Costly Services

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In the United States today, 10% of patients account for 70% of total health care expenditures. Many patients who require high-cost care are people with multiple chronic conditions, many medications,

frequent hospitalizations, and limitations on their ability to perform basic daily functions due to physical, mental, or psychosocial challenges. Some well-researched programs have been shown to reduce costs for these patients with complex health care needs, but major payment reform would be needed to spread these programs throughout the United States.

In 2002, Medicare beneficiaries with five or more chronic conditions accounted for 76% of Medicare expenditures. Health care spending for people with five or more chronic conditions is 17 times as high as that for people with no chronic conditions (see graph).¹ Because Medicare expenditures will soon become unsustainable, we urgently

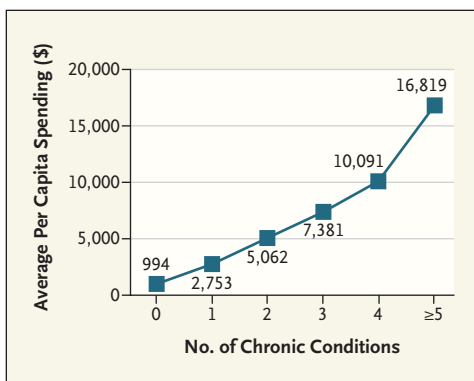
need to find a way to reduce the cost of care for this rapidly growing group.

As we found when we reviewed the evidence for a forthcoming report from the Robert Wood Johnson Foundation Synthesis Project (www.policysynthesis.org), care management may be a health care delivery innovation that can reduce costs while enhancing quality for people with complex health care needs. Care management is a set of activities designed to assist patients and their support systems in managing medical conditions and related psychosocial problems more effectively, with the aims of improving patients' functional health status, enhancing the coordination of care, eliminating the duplication of ser-

vices, and reducing the need for expensive medical services. Care management is generally provided by a registered-nurse care manager, often working with a multidisciplinary team.

The specific activities of such care managers include assessing the risks and needs of each patient; working with the patient, his or her family, and the primary care physician to prepare a care plan; teaching patients and their families about their diseases and medications; coaching patients and families on how to respond to worsening symptoms in order to avoid emergency department visits and hospital admissions; tracking patients' status over time; and revising care plans as needed.

Because care management is an intensive and expensive service, it should be targeted to people with complex health care needs who are at high risk for requiring costly care, but not to patients



Average Annual Per Capita Spending for Patients with Different Numbers of Chronic Conditions.

Data are from Anderson.¹

who are too sick to benefit. A number of predictive models have been introduced to risk-stratify populations of patients to identify those who are most likely to benefit from care management. Models that incorporate diagnostic and medication information are better at predicting future costs than models limited to measuring past costs.

Many controlled studies of care management targeting the transition from hospital to home have demonstrated that this approach results in substantial reductions in hospital utilization and costs. In one study, there was a 38% reduction in total costs during a 12-month period, as compared with usual care. Advanced practice nurses, who underwent 2 months of care-management training, made daily in-hospital visits and at least three home visits, and then followed up through telephone encounters.² In a different type of intervention, nurses were trained as “transition coaches” and then helped patients and their families to actively participate in their care. After only five contacts between the coaches and patients or their families, the rate of rehospitalization and associated hospital costs were significantly reduced.³ In-hospital discharge planning alone does not reduce

hospital costs; the success of these two interventions in reducing readmissions depends on the employment of well-trained care managers and the extension of care management into the home.

Care management that is provided in a primary care setting, if carefully implemented, can also reduce hospital use and cut health care costs. Two models currently under study — Care Management Plus and Guided Care — feature well-trained nurse care managers working closely with primary care physicians. The Care Management Plus intervention resulted in a significant reduction in hospital use by the subgroup of patients with multiple diagnoses. During the first 8 months of a 32-month, multisite, randomized, controlled trial, Guided Care reduced the number of hospital days by 24% and insurers’ net health care costs by 11% for the intervention group, though the differences were not statistically significant; final results have not yet been published.⁴ A third model that was the subject of a positive study, Geriatric Resources for Assessment and Care of Elders (GRACE), involved the use of a team consisting of a nurse practitioner and a social worker who worked closely with primary care physicians and a geriatrician. The higher-risk intervention subgroup had a significantly lower hospitalization rate than the higher-risk patients who received usual care. Each of these programs has placed substantial emphasis on training the care managers, keeping care managers’ patient panels reasonably small, fostering a close relationship between care managers and primary care physicians, and including interactions between care managers and patients in medical settings and at home. Telephonic care management has been effec-

tive when combined with face-to-face visits but has not worked by itself.⁵

Several organizations have launched innovative care-management programs for patients with complex health care needs. Such programs have appeared to reduce costs but have not yet been fully evaluated. Kaiser Permanente, recognizing that traditional primary care may lack the resources to offer high-intensity care management to its highest-risk patients, is creating high-risk clinics. In Kaiser’s Ohio region, the 1% of patients who were identified by predictive models as accounting for 27% of Kaiser’s total costs were referred to a high-risk clinic in which a geriatrician-led multidisciplinary team provided home care for a small panel of 150 patients. As compared with similar patients receiving usual care, high-risk clinic patients had fewer hospitalizations, fewer emergency department visits, and lower hospital expenses; since the numbers have been small, the changes have not yet reached statistical significance.

Capital Health Plan in Florida opened a high-risk clinic, staffed by a geriatrician and two registered nurses, for the 1% of the health plan’s enrollees who account for 25% of its total expenditures. The team can manage the care of 300 patients. Hospital admissions, emergency department visits, and total costs were substantially lower for the patients in the high-risk clinic than for those receiving traditional primary care.

The Veterans Health Administration, SCAN Health Plan in Southern California, PeaceHealth Oregon Region, and a number of projects in the Program of All-Inclusive Care for the Elderly (PACE) have also invested in inten-

sive primary care that is focused on patients with complex health care needs, with the aim of providing better care at a lower total cost through reductions in the use of hospitals and emergency departments.

Care management, with its cost-reducing potential, will not spread widely in the health care system without substantial changes in payment policy. If hospitals profit from unnecessary readmissions, they are unlikely to adopt effective hospital-to-home care-management programs. If primary care practices are not reimbursed for the work of a registered-nurse care manager, they will not hire one unless they share in the savings generated by reducing hospital admissions and emergency department visits. Other obstacles include nursing

shortages and the paucity of training programs for nurses to become effective care managers.

The evidence is strong that well-designed care management can substantially reduce costs for patients with complex health care needs. Cost-control measures, particularly in Medicare, must be targeted to the group of patients who account for the great majority of health care expenditures. Investment in care management should become a focus of the cost-containment discussion that is now dominating the debate over health care reform.

No potential conflict of interest relevant to this article was reported.

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This article (10.1056/NEJMp0907185) was published on September 30, 2009, at www.nejm.org.

1. Anderson G. Chronic conditions: making the case for ongoing care. Baltimore: Johns Hopkins University, November 2007. (Accessed September 24, 2009, at http://www.fightchronicdisease.com/news/pfcd/documents/ChronicCareChartbook_FINAL.pdf)
2. Naylor MD, Brooten DA, Campbell RL, Maislin G, McCauley KM, Schwartz JS. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *J Am Geriatr Soc* 2004;52:675-84.
3. Coleman EA, Parry C, Chalmers S, Min SJ. The care transitions intervention: results of a randomized controlled trial. *Arch Intern Med* 2006;166:1822-8.
4. Leff B, Reider L, Frick KD, et al. Guided care and the cost of complex healthcare: a preliminary report. *Am J Manag Care* 2009; 15:555-9.
5. Bodenheimer T, Berry-Millett R. Care management of patients with complex healthcare needs. Princeton, NJ: Robert Wood Johnson Foundation, 2009 (in press).

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American Roulette — Contaminated Dietary Supplements

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In one of the most dangerous cities in the United States, one portly police sergeant has more to worry about than crime. His doctor had been encouraging him for years to lose weight, and like millions of other Americans, he decided to try a weight-loss supplement to help him shed his extra pounds. But instead of losing weight, he lost his job. According to the label, his diet pills, which were imported from Brazil and sold in the United States, contained vitamin E, centella, senna, and cascara, among other “natural” ingredients. Not included on the label was the amphetamine detected in his urine drug screen. The now-unemployed sergeant is not alone. Such contaminated

supplements represent an emerging risk to public health.

In August 2009, the U.S. Food and Drug Administration (FDA) discovered more products, most of them labeled as dietary supplements, that contain a wide variety of undeclared active pharmaceutical ingredients. Now, more than 140 contaminated products have been identified, but these represent only a fraction of the contaminated supplements on the market. Unfortunately, lenient regulatory oversight of dietary supplements, combined with the FDA’s lack of resources, has created a marketplace in which manufacturers can introduce hazardous new products with virtual impunity. Although manufacturers have since 2007 been required to report

serious supplement-related adverse events to the FDA, the great majority of the estimated 50,000 adverse events that occur annually remain unreported.

This trend is particularly alarming given that, according to a recent National Health Interview Survey, about 114 million people — more than half the adult population of the United States — consume dietary supplements. These supplements, which include botanical products, vitamins and minerals, amino acids, and tissue extracts, are regulated by the FDA under the 1994 Dietary Supplement Health and Education Act (DSHEA). Before 1994, herbal products were considered food additives, and their manufacturers were required to show