Integrated Health System for Chronic Disease Management*
Lessons Learned From France

Mary Stuart, ScD; and Michael Weinrich, MD

Rated number one in overall health system performance by the World Health Organization, the French spend less than half the amount on annual health care per capita that the United States spends. One contributing factor may be the attention given to chronic care. Since the mid-1900s, the French have developed regional community-based specialty systems for patients with chronic respiratory insufficiency or failure. COPD is the major cause of respiratory failure, the fourth leading cause of death in the United States, and its prevalence is increasing. Despite the clinical success of home mechanical ventilation and the potential for cost savings, providing such services in the United States remains a challenge. Lessons from France can inform the development of cost-effective chronic care models in the United States In this article, we review the French experience in the context of the United States Supreme Court's Olmstead decision, mandating that people in “more restrictive settings” such as nursing homes be offered community-based supports. We suggest that regional demonstration projects for patients with chronic respiratory failure or insufficiency can provide an important step in the development of effective chronic care systems in the United States (CHEST 2004; 125:695–703)

Key words: chronic care model; home ventilation; Olmstead decision; respiratory insufficiency or failure

Abbreviations: ALLP = L’Association de la Region de Lyon pour la Lutte contre la Poliomyélite; ANTADIR = Association Nationale pour le Traitement à Domicile de l’Insuffisance Respiratoire Chronique; CRAM = Caisse Regionale d’Assurance Maladie; CRI = chronic respiratory insufficiency; HMV = home mechanical ventilation

A landmark US Supreme Court legal decision (Olmstead)1 and its vigorous implementation as part of the President’s “New Freedom Initiative”2–4 have provided both the judicial mandate and political support from leadership to create opportunities for significant change in the organization and delivery of services for patients with chronic diseases and disabilities. In this context, we believe that the French experience with regional medical systems for patients with chronic respiratory insufficiency (CRI) can be useful. The major purpose of this article is to report what was done in France, why it works, and why/how it is relevant to the chronic disease crisis in America as a community health network approach to long-term care and service delivery. We propose that the demonstration of a community-driven solution for CRI, using home mechanical ventilation (HMV), can establish a model with more universal application in the United States

Finding effective strategies for managing chronic diseases, which account for three quarters of US health-care costs, has been identified as one of the

*From the Department of Sociology and Anthropology (Dr. Stuart), Director, Health Administration and Policy Program, University of Maryland Baltimore County; and the National Center for Medical Rehabilitation Research (Dr. Weinrich), National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD. This research was partially supported by the Robert Wood Johnson Foundation. The views presented are those of the authors.

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Correspondence to: Mary Stuart, Department of Sociology and Anthropology, UMBC 1000 Hilltop Circle, Baltimore, MD 21250; e-mail: stuart@umbc.edu
major challenges facing health care in the 21st century, one that the US health system is not well-organized to meet. Reports detailing the resurgence of health-care costs underscore the urgency of addressing this problem and further highlight the importance of identifying cost-effective models of care for patients with chronic and disabling health conditions. A looming crisis in long-term care and the generally poor access to health care for individuals with chronic disabilities provide compelling reasons to seek alternatives to institutionalization.

Our study of the French system began as an initiative, funded in part by the Robert Wood Johnson Foundation, to identify international best practices that might serve as models for the development of integrated health systems for high-cost patients in the United States. The French system was selected for review by a team of eight health professionals from the United States, based on the advice of European health officials and experts from the World Health Organization. Beginning in the early 1980s, the French system was studied by Allen Goldberg, MD, FCCP, under the auspices of the World Rehabilitation Fund and the World Health Organization. In addition, the system had been widely studied in France. To conduct this study, we used qualitative research methods, including site visits and interviews, a review of published literature, reports, and administrative data. Our team included both specialists and a primary care physician, two health services researchers, a senior public health official, a private sector chief executive officer, and the medical director of a university-affiliated rehabilitation hospital. To understand the structure, process, and financing of the French system, the team conducted site visits and semi-structured interviews with senior public health officials, providers, and patients in the Lyon region of France in 1995. We conducted follow-up interviews in year 2000 to determine the status and impact of changes in financing that were being considered during our first visit. Subsequently, a field research team under the direction of a registered nurse spent a week in Lyon observing the home nursing care and daily life of patients living in the community.

In October 2000, the National Center for Medical Rehabilitation Research convened a workshop at the National Institutes of Health to discuss the issues around HMV. Panelists uniformly noted that obtaining affordable personal care services is crucial for the care of ventilator patients and remains very difficult. Access to knowledgeable health professionals and appropriate equipment were also identified as major problems. In this article, we discuss the implications of our findings regarding the French system for the organization and delivery of health care in the United States.

French System for Patients With CRI

To fully understand the significance of the French system for US health reform, it must be placed in an historical perspective. The key to its development was the evolution of two systems in the regions surrounding Lyon and Paris, the two largest cities in France. The regional system serving Lyon and the surrounding area is known as L’Association de la Region de Lyon pour la Lutte contre la Poliomyélite (ALLP) and began in 1960. The system serving Paris, known as Association d’Entraide des Polios et Handicapés, began in 1967. These were local/regional approaches that were developed to address the needs of institutionalized polio patients with CRI who wanted to leave the hospital. These networks evolved through the efforts of physicians, working with other caring and concerned leaders in government and the community, who wanted to find cost-effective alternatives to institutionalization and to utilize special respiratory units for the development of intensive care.

La Fédération Association Nationale pour le Traitement à Domicile de l’Insuffisance Respiratoire Chronique (ANTADIR), the national French system for CRI patients, was proposed in a 1978 study written by Andre Ludot and established under his direction in 1980. The national organization was proposed as a way to observe the results (by establishing a national observatory), to establish more uniform services across the nation (through the development of additional regional associations), and to provide several cost-saving functions (such as mass purchasing of capital equipment). Leadership from the regional associations, including ALLP and Association d’Entraide des Polios et Handicapés, were instrumental in the founding of ANTADIR, which was intended to enhance the role of the regional associations by providing a national observatory. Today, data collection and reporting on population-based outcomes remain among the most important functions of ANTADIR.

The development of regional systems throughout France to make services more geographically accessible to CRI patients was mandated by national legislation in 1991. Today, La Fédération ANTADIR features 26 nonprofit regional associations that provide 24-h service, 7 days a week. Providing both medical specialty care and home treatment, this network currently serves 50,000 ventilator-assisted or oxygen-dependent adults and children, comprising nearly all ventilator-dependent patients and 70% of those receiving home oxygen therapy in France. ANTADIR is considered to be unique for its national scope and extensive regional organization, as well as its extensive database.
The prototype for the regional systems of ANTA-DIR, and the focus of our study, is ALLP, serving Lyon and the surrounding area. Lyon is the second largest city in France, and the regional system serves a population of approximately 6 million. Dominique Robert, MD, FCCP, who has directed this system for 30 years, is internationally recognized for his medical research and practical contribution to the well-being of patients with respiratory diseases. Hôpital de la Croix Rousse in Lyon houses the inpatient program, including a general ICU (16 to 20 beds), a respiratory ICU (8 to 10 beds), a respiratory unit for long-term home equipment (8 beds), a sleep laboratory (4 beds), and daily clinics.

The respiratory intensive care program at Hôpital de la Croix Rousse was initiated in the early 1950s to treat polio patients and subsequently pioneered the development of HMV. Centre Medical Bellecombe-Esperance, located about 90 min by car from Lyon, was established to provide vital secondary services for ALLP. Between 1965 and 1980, most polio survivors were discharged to home. By 1981, ALLP was already serving 445 patients. As the need for inpatient care for polio patients declined, Hôpital de la Croix Rousse began to treat patients with respiratory failure of all causes. By 2000, ALLP had grown to oversee the respiratory care of >4,000 patients living in the community with ventilators, continuous positive airway pressure, and other respiratory assistance (Dr. Dominique Robert; personal communication; 2000). Of note is the increasing proportion over the years of ALLP resources devoted to maintaining patients with CRI in the community (eg, continuous positive airway pressure for patients with sleep apnea) [Dr. Dominique Robert; personal communication; 2000].

The relationship between the Hôpital Croix-Rousse and Bellecombe is extremely important. Each has its own purpose and function, and there is close interaction. The Bellecombe model has the following vital functions: it can serve patients with acute destabilization; it provides subacute care (not only weaning); it offers long-term care (an institutional alternative); it conducts preparation for successful hospital discharge planning; and it offers respite care (an institutional alternative).

Patients in acute failure typically are admitted to Croix-Rousse Hôpital. After stabilization, they are referred to Bellecombe (where the average length of stay is 30 days) for continuing treatment and hospital discharge planning. In addition to receiving referrals from Croix-Rousse and general hospitals, Bellecombe provides “tune-ups” for patients who are living in the community and operates a domiciliary facility for patients who do not have families or supported living options that enable them to live in the community.

ALLP plays a major role in integrating intensive care, intermediate care, and home respiratory care. The first organization of this type in France, ALLP has subsequently served as a model for similar organizations in other regions. To promote continuity and confidence, nurses from ALLP begin working with patients and their families in the ICU at Hôpital de la Croix Rousse and at the secondary centers to prepare for discharge from the hospital. Once a patient is discharged to the community, ALLP provides continuing oversight to see that equipment is appropriate for the patient’s needs, that it is being used properly, and that there is respiratory sufficiency. Routine home visits are scheduled every 2 months, however, ALLP staff are always on call and will make emergency visits for technical problems.

Most of these patients live with their families. Our team observed HMV patients ranging in age from early childhood to the late 80s, who lived at home with family members. However, some patients live without direct caregiving from family members. For example, we observed a vivacious 72-year-old woman who lives alone in her own apartment, requires 16 h of ventilator support in a 24-h period, goes shopping and attends the opera and symphony weekly. We also observed another patient living in the domiciliary facility located on the hospital grounds at Bellecombe. This patient requires too much care to live independently and lacks the family to provide the support for home care.

Other community-based options in the Lyon region are provided by Foyer ALLP, which offers group living arrangements for adults who require 24-h ventilator support and assistance with all major activities of daily living. In addition, ventilator users have adopted the independent-living model and manage their own funds, home, and lives. For example, we observed four individuals who had organized themselves to achieve maximum independence. They had pooled their disability income and supplements to rent and modify an apartment for wheelchair accessibility, hire community nursing and personal care attendants, and purchase a van. ALLP provides support for their ventilator care. They successfully engage in entrepreneurial activities, go shopping, attend cultural events, have friends, take vacations, and lead lives that appear to be rich and full.

The major limitation of ALLP is that it does not provide professional and nonprofessional caregivers in the home other than support for oxygen therapy and HMV. ALLP will help to locate community nurses and personal care assistants to provide gen-
eral home care, and it maintains regular communication with patients’ primary care physicians. Associations of health professionals who make home visits provide the personnel required to support and/or supplement the informal family caregivers. Since patients with chronic respiratory failure or CRI often experience other comorbidities and require assistance with activities of daily living other than oxygen therapy, access to a variety of medical and personal care personnel is essential for home care patients, and is required to support informal family caregivers as well individuals in group homes. For further discussion of the regional systems, readers are referred to Goldberg’s earlier publications.13–20

CLINICAL OUTCOMES

ANTADIR, ALLP, and other components of the French health-care system were not established as randomized prospective experiments in patient care or health-care organization and delivery, so it is difficult to isolate and attribute changes in patient outcomes over time to the effects of these organizations. Nonetheless, from its inception ANTADIR has used the large scale of its population base to systematically study and optimize the parameters for home oxygen therapy.27,28 The 10-year survival rate for patients receiving home oxygen therapy or mechanical ventilation has been evaluated and is roughly comparable to those of previous studies in other European countries,29 although previous studies have utilized narrower inclusion criteria, and differences between smoking habits in different countries make rigorous comparisons difficult. More recently, ANTADIR conducted a controlled trial30 of continuous positive airway pressure for obstructive sleep apnea and demonstrated a 40% decline in the number of accidents involving these patients.

FRENCH FINANCING

France has a universal health insurance system. This system is employer-based, offers consumers the freedom to choose their providers and hospitals, and includes both for-profit and nonprofit providers. Health insurance is compulsory, and the unemployed are subsidized through a centralized indigent fund administered by the Ministry of Health.31 Public health policy is determined by “les caisses,” which are quasi-public agencies. Overall national policy is determined by the major caisse, Caisse Nationale d’Assurance Maladie, which is equivalent in function and significance to the Center for Medicare and Medicaid Services in the United States. The Caisse Nationale works with the governmental agencies, notably the Ministry of Health and Ministry of Social Security. It is important to note that France, like most nations of the world (the one exception being the United States), has a separately designated Ministry of Health. Regional health policy is determined by the regional caisse (Caisse Regionale d’Assurance Maladie [CRAM]), which negotiates contracts with the regional associations. Local health funding administration is the responsibility of the local caisse (Caisse Primaire d’Assurance Maladie).

The health policy organization (ie, the CRAM) for the Rhone-Alps Region played a key role in the development of the ALLP. The CRAM was responsible for negotiating budgets for hospitals in the region and worked with Dr. Robert in financing the development of home care. By the 1950s, the expansion of this system was encouraged as a response to limited capacity and pressures to contain the growth of health-care cost expenditures in France. The success of the regional organization at that time was due to the fact that there was funding available with clear cost accounting and contracts with a defined payment system based on the therapeutic requirements of patients. Payments for long-term oxygen therapy included the cost of running the machines and maintenance, as well as administrative overhead for the regional association and the purchase of materials. A special payment system, which was used by the regional associations for equipment and social/technical supportive services, was put into place for major purchases. Thirteen cost centers were established for the ALLP, each corresponding to a specific duty. The flexibility of the budgetary authority of the CRAM for the region is considered to be a key factor in the evolution of ALLP (Christine Idnounaz, Agent Change des Questions Hospitalies, and Alain Deblasi, regional medical advisor for the CRAM of the Rhone-Alps Region; interviews and notes; June 12, 1995, and January 20, 2000).

The growth of for-profit systems began in the early 1990s, leading to increasing concerns regarding quality as well as to payment inequities. In 1995, the time of our first visit, payments for respiratory care to for-profit providers were 40 to 50% higher when compared to nonprofit providers. Yet for-profit providers tended to refer the sickest and most complex patients to the nonprofit systems (which are required to take all referrals). Nonprofit providers were struggling with increasing patient acuity and capped budgets. Responding to these inequities, the National Health Insurance undertook an extensive evaluation of long-term oxygen therapy from both a medical and economic perspective. By 1999, the
payment systems had been revised, and both types of providers were being paid the same using an updated and expanded formulary.

The new formulary, which details a wide array of services and procedures that might be provided to a CRI patient, has reduced the discrepancy in payments between nonprofit and for-profit providers. Through the new formulary, the National Health Insurance seeks to promote the development of appropriate levels of care by adjusting payments to the patient’s disability level, the amount of care required, and the location (home or institution) where the care is provided (Christine Idnoumaz, Agent Change des Questions Hospitalièes; interviews and notes; January 20, 2000; and Alain Deblasi, regional medical advisor for CRAM, the National Health Insurance of the Rhône-Alps region; interviews and notes; June 12, 1995 and January 20, 2000).

Prevalence and Costs of Chronic Respiratory Patients in the United States

Chronic respiratory failure is caused by intrinsic pulmonary diseases (including restrictive diseases, developmental disorders, infectious diseases, and, most commonly, COPD) and diseases affecting the chest wall, component muscles, and their neurologic control (most commonly poliomyelitis, cervical spine injury, amyotrophic lateral sclerosis, muscular dystrophies, and kyphoscoliosis). The American Association for Respiratory Care defines a chronic ventilator-dependent patient as “...a patient who must receive mechanical ventilatory support for at least six hours of each 24 h period and has been receiving mechanical ventilation for 30 days or more.”32 The American Association for Respiratory Care surveyed acute care hospitals in the United States in 1990, arriving at an estimate of 11,000 chronic ventilator-dependent patients in acute care hospitals. Thirty-nine percent of patients were over the age of 65 years. An equal percentage of the patients were either awaiting placement in other facilities or remained in the hospital because of difficulty arranging financing for their care in alternative facilities.

The annual costs in acute care hospitals for patients requiring chronic mechanical ventilation were estimated at $3.2 billion. Make33 reviewed the epidemiology of long-term ventilation outside acute care hospitals. Extrapolations from individual state-wide data yielded an approximate US prevalence of 4.9 chronic ventilator-dependent patients per 100,000. Seneff et al34 studied the 6-month costs of chronic ventilator-dependent patients in hospitals and long-term care facilities. The average annualized total hospital cost was $156,948, while the cost in long-term care was $113,650. Using these figures and the population estimates above, the total annual cost of caring for ventilator-dependent patients in long-term care is approximately $1.6 billion, with total annual costs in all settings approaching $3.4 billion.

Patients with less advanced disease (ie, those with symptomatic respiratory insufficiency) represent a far greater population with vastly greater current health-care costs, leading to potentially even greater costs. Of the US population, 6.8% have significantly diminished lung function and 8.5% (16 million individuals) have obstructive lung disease.35 Annual health-care resource utilization by this population in 1993 was estimated at $15 billion.36 Additionally, “2% of women and 4% of men in the middle-aged work-force meet the minimal diagnostic criteria for the sleep apnea syndrome.”37

As noted in Table 1, COPD (International Classification of Diseases, 9th revision, codes 323 to 325) was responsible for >200,000 deaths in the United States in 1998. It is the fourth leading cause of death in the United States, comprising 4.8% of all deaths in the United States. The proportion of all deaths due to COPD in France is slightly lower at 3.2%. The prevalence of COPD is 57 cases per 1,000 in the United States compared to 45 per 1,000 in France. However, there is considerable uncertainty as to the exact prevalence rates for COPD due to underdiagnosis38 and different definitions.39 Thus, we cannot conclude from these data that COPD patients in the United States have inferior outcomes to those in France, but certainly overall mortality figures do not suggest that the care in the United States is superior.

What is all too abundantly clear is that the prevalence of COPD is continuing to rise39 and that the current systems of care in the United States for patients with complex medical problems are showing signs of increasing strain. Many states face significant budget deficits for 2003 and are moving to cut expenditures for health care, especially Medicaid benefits.40 The costs for health insurance have re-

<table>
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<th>Variables</th>
<th>United States</th>
<th>France</th>
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<tr>
<td>COPD deaths</td>
<td>212,353</td>
<td>30,743</td>
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<tr>
<td>All deaths</td>
<td>2,337,256</td>
<td>534,003</td>
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<tr>
<td>COPD, % of deaths</td>
<td>4.8</td>
<td>3.3</td>
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<tr>
<td>Population</td>
<td>270,298,500</td>
<td>58,852,600</td>
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<tr>
<td>COPD cases estimated</td>
<td>15,300,000</td>
<td>2,633,000</td>
</tr>
<tr>
<td>COPD prevalence, per 1,000 population</td>
<td>57</td>
<td>45</td>
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</tbody>
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*Sources: Deaths and Population from World Health Organization database62; COPD prevalence estimates from Stang et al.63
sumed their double-digit annual increases, and concern over the organization and financing of Medicare is again on the Congressional agenda.41

EXPERIENCE WITH HMV IN THE UNITED STATES

HMV for patients with respiratory failure also began in the United States as a result of the polio epidemics. With the decline of polio after the introduction of polio vaccines, the specialized centers and expertise to manage these patients atrophied.42 HMV became a relative rarity until the development of the “Katie Beckett” waivers, developed in the 1980s under the leadership of Surgeon General Koop, allowed Medicaid funding for children requiring HMV.43 Thus, the data describing the recent US experience with HMV have been confined largely to small demonstration projects financed through Medicaid waivers.44–46 Despite the limited experience, consensus on technology and guidelines for the use of HMV are well-developed.47 and the safety is well-established.48 Bach et al46 found a net annual savings of $176,137 per patient with 30 patients maintained with HMV personal care attendants and home care, compared with the costs of their care in institutions prior to discharge home. Sevick and Bradham49 reviewed the studies on the direct medical costs for HMV and performed a survey of formal and informal caregiver services provided to patients in 37 states. For at least two thirds of patients, they found that long-term ventilation at home was less costly than institutional care, even when the lost wages of the caregivers were factored into the home-care costs.

Despite the potential cost savings, few programs for HMV have been conducted outside of the Medicaid population. Most notably, the Kaiser Foundation Health Plan conducted a demonstration project including 158 patients for > 7 years. The cost of durable medical equipment and 16 h of daily attendant care in this program was $78,000 annually. The demonstration ended in 1993 and was incorporated into regular plan benefits. With funding from the Pennsylvania Department of Health, the Children’s Hospital of Philadelphia has developed and maintained a statewide program for children with chronic respiratory failure since 1979.22 A particularly vexing problem for families with ventilator-dependent children is that, in some states, Medicaid benefits for these children terminate when they reach the age of majority, and there are few institutional options available for ventilator-assisted children.45

RECENT TRENDS AFFECTING CHRONIC CARE

As a result of the Olmstead decision, “thousands of people currently living in ‘more restrictive settings’ such as public institutions and nursing homes must be offered housing and community-based supports.”50 The lead agency for Olmstead planning efforts in most states is the state Medicaid agency. The Olmstead decision potentially requires that Medicaid beneficiaries receiving long-term mechanical ventilation who currently reside in institutional settings be offered the opportunity for ventilation therapy at home. The revised interpretation of a key Medicare eligibility criterion (“homebound”)51 now loosens the previous restriction of home care services to only those Medicare beneficiaries who were completely homebound. This could allow for Medicare coverage of home-care services to HMV patients who can function outside the home, although the range of permissible activities is still limited. In addition, the Department of Health and Human Services plans initiatives to alleviate the shortage of direct-service workers for community care.52

LESSONS LEARNED FROM FRANCE

What are the lessons from France and the Lyonnaise regional system for CRI that might be useful as states seek to comply with Olmstead?

1. The importance of physician leadership. Our study of the Lyonnaise regional system, as well as other international best practices,53 highlights the importance of physician leadership coupled with support from key public officials. Throughout our interviews, public officials and others cited Dr. Robert’s dedication to quality patient care, commitment to research, and work ethic as factors in Lyon’s international reputation and in the development of the French system. Dr. Robert, on the other hand, was clear that a good working relationship with public officials, particularly at CRAM, which had the financing authority, was essential to the early development and continued success of community-based services.

2. Appropriate financial bench-marking. Regional oversight with the flexibility to develop a new service was cited as a key factor in the initial start-up of ALLP. However, by the time of our first visit, ALLP faced serious financial problems. The National Health Insurance undertook a comprehensive review of respiratory services that resulted in stability for ALLP and, at the same time, established ALLP as the benchmark for quality of care and costs in caring for patients with CRI.
3. Critical number of patients. A repeated theme in Lyon is that systems must serve enough patients to promote clinical competency and to offer economies of scale. This is consistent with a growing body of literature regarding the importance of volume and specialty care in outcomes for patients with medically complex conditions.

4. Continuity of care. Because ALLP is part of a national network, patients who want to travel or move to another region can receive the same type of care. The service is organized around the common need for a certain type of technology for home care, rather than a specific diagnosis. To facilitate continuity, senior clinicians in ALLP provide oversight for both inpatient and home care.

5. Personal care services. The availability of such services, either from family or purchased from community providers, is essential to maintaining patients requiring ventilation in the community.

6. Quality of life. As mentioned in our previous examples, it is possible for even profoundly disabled patients to lead meaningful lives in the community.

7. Assistive technology. Specialty systems such as ALLP provide an environment conducive to the development and efficient use of assistive technology. Patients are able to try face masks, respirators, and other equipment, where individual comfort and success may vary based on product specifications, before-purchasing. The volume of patients facilitates recycling assistive equipment. Researchers at the regional specialty hospital are at the forefront of developing new technology in response to their patient’s needs.

8. Regional/local organization. The evolution of ANTADIR, beginning in Lyon followed by Paris, and ultimately forming a national network of services, provides a model for innovation, and for the diffusion of new technology and service integration models. There is considerable variation among the regional systems. France is not homogenous despite the harmonizing presence of ANTADIR. Each regional association evolved differently due to local participants (ie, physicians, patients, and community leaders) and resources.

CONCLUSION

France is rated by the World Health Organization as No. 1 in overall health system performance among all 191 member states (by comparison, the United States ranked No. 37). The French health system is considerably less costly than the US system. France spends $2,115 per capita per year on health care, or 9.3% of the gross domestic product, as opposed to the United States, which spends $4,358, or 12.9% of gross domestic product. Between 1990 and 1999, health spending increased 2.1% in France, compared with 3.0% in the United States. The differences in cost can be explained partially, but not totally, by lower physician salaries and lower administrative costs for health care in France. Another factor may be the chronic care provided by the regional population-based prevention and disease management systems such as ALLP that combine specialized medical care, assistive technology, and home support.

Perhaps the most fundamental lesson from France is the emphasis on community through the regional associations. Innovative approaches to chronic, high-cost medical conditions utilizing appropriate technology, specialty care, and delivery systems can improve delivery of care, reduce costs, and prevent institutionalization. The system for the care of patients with severe lung disease in France links critical care centers with step-down pulmonary rehabilitation programs in low-cost regional hospitals and home ventilator maintenance programs. Patients who would be permanent nursing home residents in the United States can be maintained at lower cost in their homes and with better quality of life.

We suggest that by focusing on the regional level, as France has done, and as has been demonstrated to be effective for trauma and neonatal intensive care in the United States, a national system for HMV patients can be developed. Furthermore, we think that Olmstead provides not only the means but the imperative to do so. Patients requiring HMV are a relatively small group of high-cost patients who are dispersed throughout the country. Few providers or health plans have substantial experience with such patients in their management. A system of regional centers for the management of chronic ventilation could serve the needs of patients from all payers. Such a system would return patients to live in the least restrictive settings, and to utilize home care, secondary centers, and acute care centers of excellence. The experience in France and limited experience in the United States suggest that this approach would be at least budget-neutral.

The development of a national system for HMV could provide a model for the management of severe chronic diseases. The French experience suggests that the way to begin is with one or more “benchmark” state or regional systems. This idea is consistent with Denmark’s successful experience in trans-
forming institution-based long-term care into an efficient national system of home and community-based services. It is also consistent with recent recommendations from the National Academy of Sciences Institute of Medicine regarding ways to improve care for patients with chronic illnesses.

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