

Cost-Effectiveness Of Respiratory Care

(Rev. 1/95)

Increased Need for Respiratory Care Outside of the Acute Care Hospital

Respiratory care is an allied health specialty performed under medical direction for the assessment, treatment, management, diagnostic evaluation, and care of patients with deficiencies, abnormalities, and diseases of the cardiopulmonary system. Respiratory care practitioners care for patients ranging from the premature infant whose lungs are underdeveloped to the elderly patient whose lungs are diseased. Individuals who suffer from such diseases as emphysema, bronchitis and lung cancer; children who suffer from asthma or are afflicted with cystic fibrosis; and patients of all ages who require the use of a ventilator to breathe -- they are all often cared for by the respiratory care practitioner.

Home care services have proven to be an integral part of the health care delivery system and a cost-effective alternative to expensive acute care hospital stays. The aging population, the spread of AIDS and tuberculosis, the increasing incidence of asthma, and advances in medical technology allowing technology-dependent patients to lead more productive lives outside the hospital, will increase the need for the services of trained and educated respiratory care practitioners. Respiratory patients will continue to be discharged from the hospital still requiring care, thereby increasing the demand for respiratory care services in alternate sites.

Overall, government health care policy has not kept pace with the advancement of medical technology and procedures. In particular, this has been the case for respiratory care services. When the Medicare/Medicaid program was first developed, respiratory care was fully recognized as a viable component of hospital services. Coverage and reimbursement for this service in the hospital have never been in question. However, Medicare/Medicaid policy has barely advanced in the past 25 years for respiratory care services rendered outside acute care settings. The scope of respiratory care services has developed significantly beyond the hospital setting. Where respiratory patients were once confined to a hospital bed, the same patients may now be cared for in a skilled nursing facility or in the patient's own home. It is the respiratory care community's recommendation that Congress recognize the role that respiratory care plays in the provision of cost-effective health care in alternate sites.

Respiratory Rehabilitation: A Cost-Effective Alternative

The purpose of rehabilitation is to ameliorate physical and cognitive impairments resulting from illness or injury, and to restore or improve functional ability so that individuals can return to work and lead independent and fulfilling lives. Pulmonary rehabilitation is designed to stabilize or reverse the effects of pulmonary diseases, such as emphysema, bronchitis, or chronic obstructive pulmonary disease (COPD) (i.e. those suffering from a degenerative disease of the lungs). One federal program, the Black Lung Program, has, since 1978, recognized the importance of structured outpatient pulmonary rehabilitation programs. The Coal Mine Procedure Manual states,

"Further, DCMWC (Division of Coal Mine Workers Compensation) believes that properly administered pulmonary rehabilitation will reduce the need for future medical treatment, which would eventually prove more costly to the program."

Respiratory Care Saves Money

The scientific evidence on the cost-effectiveness and efficacy of providing respiratory care in alternate care sites continues to grow. The studies documenting cost-effectiveness of respiratory care have varied in methodology, scope, and time frame. The conclusion, however, is still the same: **respiratory care saves money.**

- A 1991 Lewin/ICF economic analysis focused on the effect of the availability of home medical equipment services on the cost of care for patients in three separate diagnostic categories. One of the categories studied was patients suffering from COPD. Lewin/ICF determined that \$520 per patient per episode would be saved if a COPD patient was to receive care in the home rather than in the hospital. With an estimated patient population of 93,000 COPD patients per year, savings to the health care system amount to over \$48 million per year.
- A recent Gallup survey studied the cost of providing hospital care to chronic ventilator patients. The survey estimates that there are over 11,500 chronic ventilator patients currently in U.S. hospitals costing an estimated \$789 per patient per day. *This totals over \$9 million a day!* Once a patient is medically able to be discharged, it takes an average of 35 days to place a chronic ventilator-dependent patient in an alternative care site such as the home or skilled nursing facility. *That translates to an excess of \$27,000 per patient in unnecessary hospital costs.* Outdated reimbursement policies, which limit patients' access to respiratory care services outside the hospital, contribute to discharge delays and their subsequent excess cost.
- In the early 1980s, the Department of Health, Education and Welfare (HEW) sponsored a study that tracked 775 COPD patients, who received home respiratory services from a qualified respiratory therapist. The results of the study shows that hospital re-admissions for these patients were reduced from 1.28 per year to .55 per year. Furthermore, for those patients who were re-admitted to the hospital, the length of stay was decreased from 18.2 days to 5.7 days. The savings estimated for these 775 patients totaled \$1,097,250 (1980 dollars).
- A 1982 conference headed by former Surgeon General C. Everett Koop on home care alternatives resulted in the initiation of three pilot home care studies. One pilot program in Maryland provided home care to respirator-dependent children and compared hospital costs and home care costs. The savings provided by home respiratory care were more than \$15,000 per patient per month. Over the 34 month period of the pilot program, \$3.1 million in savings were realized due to the availability of home care for these children.
- A 1991 Illinois-based study on ventilator-dependent infants receiving home respiratory care versus hospital-based care saved the state over \$4 million during the four-year course of the program.
- A 1989 consensus conference co-sponsored by the AARC, the Food and Drug Administration (FDA), and the Health Resource Services Administration (HRSA) (attended by representatives from more than 60 national organizations and associations) studied the problems associated with the introduction of respiratory care equipment into the home. Practitioners, consumers, and representatives of the federal government that recommended that third-party reimbursement policies should allow home-bound respiratory patients to receive, when necessary, care from respiratory professionals.
- Aetna Life & Casualty developed an Individual Care Management Program for patients suffering from catastrophic illness. The following chart summarizes costeffectiveness data for home care for these individuals:

Cost Per Month of Hospital Care Compared to Home Care, Selected Conditions

Condition	Cost of Hospital Care	Cost of Home Care	Dollar Savings	Difference
Infant born with breathing & feeding problems	\$60,970	\$20,209	\$40,761	66.8%

Respiratory distress/oxygen dependency	\$36,000	\$11,500	\$24,500	68.0%
Ventilator-dependent children	\$15,742	\$9,153	\$6,589	41.9%
Patient requiring respiratory support	\$24,715	\$9,267	\$15,448	62.5%
Oxygen-dependent children with a tracheostomy	\$12,236	\$5,304	\$6,932	56.7%
AIDS patient care	\$23,190	\$2,820	\$20,370	87.8%
Pediatric AIDS	\$70,153	\$16,461	\$53,692	76.5%

- Norwalk Hospital in Connecticut conducted a four year study to evaluate the effectiveness of a hospital-based home care program for patients with severe COPD. A comprehensive home care service program was provided to 17 pulmonary patients who previously required frequent hospitalization. The COPD patients participated in a comprehensive respiratory home care program and showed significant decreases in the following:

Hospitalization Admissions	88 pre-program	53 on-program
Hospital Days	1,181 pre-program	667 on-program
Emergency Room Visit	105 pre-program	64 on-program

Costs for hospitalization, emergency room visits, and home care fell from \$908,031 to \$802,999 resulting in a savings of \$105,032 or \$328 per patient per month over the course of 48 months.

- Several research studies conducted in the past several years have compared inpatient care to home care costs for a specific group of patients. The cost savings data for these studies is summarized in the chart below. The information has been aggregated at a monthly level for purposes of comparison.

	Per Month Hospital Cost	Per Month Home Care Cost	Per Month Dollar Condition Savings
a. Ventilator dependent adults	\$21,570	\$7,050	\$14,520
b. Oxygen dependent children	\$12,090	\$5,250	\$6,810

(a) Bach, J.R., Intinola, P., Alba, A.S., & Holland, I.E., (1992). The ventilator-assisted individual: cost analysis of institutionalization vs. rehabilitation and in-home management. *Chest*, 101 (2), 26-30.

(b) Fields, A.I., Rosenblatt, A., Pollack, M.M. & Kaufman, J. (1991). Home care cost-effectiveness for respiratory technology-dependent children. *American Journal of Diseases of Children*, 145, 729-733.

