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AIDS and New England Hospitals

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The Centers for Disease Control projects that nine thousand persons with AIDS will be alive in New England in 1991, representing a sevenfold increase from 1986. Our analysis indicates that more than 2 percent of medical/surgical beds in New England will be used for AIDS care by 1991, representing 766 fully occupied hospital beds. The direct cost of providing hospital care to New England's AIDS patients is projected to be \$195.2 million in 1991, reflecting 3 percent of all hospital inpatient costs in the region.

AIDS treatment is very unevenly distributed among hospitals in New England. Just twenty hospitals (8 percent of short-term general hospitals in the region) provided over 60 percent of the care required by all AIDS patients in New England in 1986. If this trend continues, nearly 5 percent of all the beds available in these twenty institutions will be required for AIDS care by 1991.

Alternatives to inpatient care are an important means of limiting the demands the AIDS epidemic places on inpatient care facilities. A number of outpatient AIDS clinics have been established in New England hospitals, including clinics at Yale-New Haven Hospital and Rhode Island Hospital. However, skilled nursing facilities in New England, as in other parts of the country, are not prepared to care for AIDS patients. Similarly, the development of in-home services for AIDS patients is just beginning in New England.

Hospital planning for New England should begin addressing the need to expand alternative care services. Hospitals may begin by developing an integrated system of inpatient care with outpatient clinics and by designing units or multidisciplinary teams to care for AIDS patients. But even the best case management and discharge planning efforts cannot succeed if there is no place outside the hospital for AIDS patients to go. Each state needs to look closely at its capacity to provide long-term care, hospice care, and home care in order to fill gaps where they exist.

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AIDS cases have been reported in every state in the nation, and although the preponderance of cases to date have occurred in New York City and San Francisco, national projections indicate that by 1991, more than 80 percent of AIDS cases will occur outside these two areas of concentration. While current estimates indicate that AIDS cases utilized nearly one million days of inpatient care nationwide in 1986, projections for 1991 show AIDS patients requiring more than 5 million days of inpatient care.¹ This is nearly 60 percent more inpatient care than motor vehicle accident victims or lung cancer patients required in 1980. The six New England states are projected to have 9,020 live AIDS cases in 1991, representing more than 5 percent of the nation's AIDS cases.

In order to assess the impact of the AIDS epidemic on hospitals in New England, projections of inpatient bed days, inpatient beds, and inpatient costs were constructed for each of the six New England states. Estimates of three basic parameters are necessary to produce these projections: number of AIDS cases alive during the time period (prevalence); number of days of inpatient care required per patient; and the average daily cost of care for AIDS patients.

Methods

The number of bed days of care is defined as the product of prevalence and days of care per case, and an inpatient bed is defined as an acute care bed occupied for a full year (bed days/365). Inpatient costs are defined as the product of estimated days of care and the average daily cost of care.

W. Meade Morgan of the Centers for Disease Control (CDC) developed a model for projecting the prevalence of AIDS on the basis of cases reported between January 1983 and April 1986. The model projects 174,000 prevalent AIDS cases nationally in 1991.² At our request, Morgan assisted us in breaking down the prevalence projections by state.³ Table 1 displays these projections for the New England states.

The first study of AIDS treatment costs with a national scope was conducted by Andrulis et al.⁴ The study included a sample of 169 public and private teaching hospitals, representing over one-third of the AIDS-related hospital admissions in the United States in 1985. The Andrulis survey included 11 New England hospitals, reflecting 233 AIDS admissions and more than seven thousand days of inpatient care for 134 AIDS patients. Andrulis found that AIDS patients in New England used an average of thirty-one hospital days in 1985. In our projections for New England, we have used this thirty-one-day estimate for hospital days per patient alive in a year.

The cost of care per day for AIDS hospitalizations has been estimated in a number of studies. Scitovsky found \$887 per day (charges) at San Francisco General Hospital;⁵ Seage found \$666 per day (costs) at New England Deaconess Hospital.⁶ Andrulis estimated \$635 per day (costs) from his survey. We have relied on Andrulis's estimate but have increased it by 10 percent for the increased levels of nursing care associated with AIDS patients. The daily cost of care used in our analysis was \$698. The adjustment for nursing care was added because several studies have found intense levels of nursing care required by AIDS patients. A study of nursing care for AIDS patients at the New York City Health and Hospitals Corporation found, for example, that AIDS cases required 40 percent more direct nursing care than other medical-surgical patients.⁷ Other studies have found that AIDS patients require as little as 28 percent and as much as 100 percent more nursing-care hours than the average patient.⁸ The cost adjustment applied above assumes that

Table 1

**Projections of AIDS Prevalence in
New England, 1986–1991**

State	Prevalence in 1986 (est.)	Percent of New England Cases, 1986	Percent of U.S. Cases, 1986	Prevalence in 1991 (est.)
Maine	50	4.21%	0.16%	425
New Hampshire	31	2.61	0.10	276
Vermont	12	1.01	0.04	106
Massachusetts	656	55.27	2.11	4,346
Rhode Island	81	6.82	0.26	722
Connecticut	357	30.08	1.15	3,145
New England	1,187	100.00%	3.82%	9,020

NOTE: Prevalence estimates rounded to nearest case. On the advice of W. Meade Morgan of the Centers for Disease Control, the original prevalence estimates were increased by 20 percent to account for underreporting and underascertainment.

Source: Projections based on CDC data on AIDS cases reported between January 1983 and April 1986.

AIDS patients use 40 percent more nursing care than other patients and that nursing represents 25 percent of total inpatient costs.⁹

**Hospital Bed Need and Costs for AIDS in New England:
1986–1991**

We project that there will be 9,020 persons in New England with AIDS alive in 1991, more than a sevenfold increase from 1986 (see table 1). More than 80 percent of the cases in New England will be concentrated in Massachusetts and Connecticut, but New Hampshire, Vermont, Maine, and Rhode Island, with far fewer cases, will still have sufficient numbers to present local hospitals with a major challenge. For example, prevalent cases in New Hampshire are estimated to increase from 31 in 1986 to 276 in 1991; in Rhode Island, prevalent cases are estimated to increase from 81 in 1986 to more than 700 in 1991. Thus, Rhode Island in 1991 may well have as many AIDS cases as Massachusetts had in 1986.

The increases in case load will have substantial impacts on hospital utilization. We project that in 1991 AIDS patients will require more than 279,000 bed days of inpatient care in New England (see table 2). This represents 765 fully occupied hospital beds. This is as many hospital beds as were occupied by AIDS patients in New York City in 1986.¹⁰ While a quarter of 1 percent of medical/surgical beds in New England were used for AIDS treatment in 1986, projections show this growing more than sevenfold to nearly 2 percent of medical/surgical beds in 1991 (see table 2).

The cost of providing care to New England's AIDS patients is projected to be \$195.2 million in 1991, reflecting 3 percent of all hospital inpatient costs in the region (see table 3). This is substantially more than utilization levels in 1986, when an estimated \$25.7 million was spent on inpatient AIDS care, reflecting .39 percent of total inpatient costs.

The impact of AIDS is projected to vary across the six New England states. In Connecticut, we expect that by 1991, 3.2 percent of all medical/surgical beds will be dedicated to AIDS treatment (table 2). This is a higher proportion of AIDS beds to total medical/surgi-

Table 2

State	Hospital Use by Persons with AIDS in New England, 1986 and 1991				Percent of Medical/ Surgical Beds Needed for AIDS, 1991*
	Hospital Bed Days for AIDS 1986	Hospital Bed Days for AIDS 1991	Hospital Beds Occupied 1986	Hospital Beds Occupied 1991	
Maine	1,550	13,175	4	36	1.0%
New Hampshire	961	8,556	3	23	0.9
Vermont	372	3,286	1	9	0.6
Massachusetts	20,336	134,726	56	369	1.8
Rhode Island	2,511	22,382	7	61	1.9
Connecticut	11,067	97,495	30	267	3.2
New England	36,797	279,620	101	765	1.9%
United States	928,584	5,057,136	2,545	13,854	1.9%

*Percentages calculated on the basis of the number of medical/surgical beds reported in *Hospital Statistics 1986*, American Hospital Association, Chicago, Ill.

cal beds than was found in either New York City or San Francisco in 1986.¹¹ AIDS patients in Rhode Island and Massachusetts are projected to use just under 2 percent of all medical/surgical beds in each state in 1991. In Massachusetts, AIDS cases are projected to account for more than 2.5 percent of all inpatient hospital expenses in 1991, and in Rhode Island, for nearly 3.5 percent of these expenses in 1991. With only 106 cases projected, Vermont will experience slightly more than one-half of 1 percent of its medical/surgical beds being used for AIDS in 1991.

A Few Hospitals Treat Most of the AIDS Cases

In discussions with hospital associations and health officials, it has become clear that AIDS treatment is very unevenly distributed among hospitals. The Massachusetts Hospital Association, for example, did pioneering work on the concentration of AIDS cases in their AIDS task force report.¹² The research showed that 57 percent of all AIDS discharges in Massachusetts were from just three hospitals. At one of these hospitals, extrapolation of present trends indicated that as many as 30 percent of its beds could be filled by AIDS patients by 1991.

We obtained information concerning the concentration of AIDS cases for each of the six New England states and assessed this problem for the region as a whole. Nine hospitals (3 in Massachusetts and 6 in Connecticut) currently are treating nearly half the region's AIDS cases, and 20 hospitals out of the 246 short-term general hospitals in New England are currently treating more than 60 percent of the region's AIDS patients (see table 4). In some states, the level of concentration is even more intense. For example, in Rhode Island, 3 hospitals are treating 90 percent of that state's cases; and in Maine, 2 short-term general hospitals out of a total 42 in the state (4.8 percent of the state's short-term general care hospitals) reportedly are treating 90 percent of that state's AIDS cases.

If this trend continues, these institutions will be particularly hard hit by the proliferation of AIDS cases. By 1991, if the current distribution remains unchanged, the 20 "high concentration" hospitals in New England are projected to provide more than 175,000 bed

Table 3

**Hospital Inpatient Treatment Costs for AIDS
as a Percentage of Total Hospital Inpatient Costs,
1986 and 1991**

State	Total Inpatient Costs in General Hospitals*	Hospital Inpatient Costs for AIDS 1986	Hospital Inpatient Costs for AIDS 1991	AIDS Cost as a Percent of Total Inpatient Cost, 1986	AIDS Cost as a Percent of Total Inpatient Cost, 1991
Maine	\$ 467,325,108	\$ 1,081,900	\$ 9,196,150	0.23%	1.97%
New Hampshire	364,169,829	670,778	5,972,088	0.18	1.64
Vermont	191,800,350	259,656	2,293,628	0.14	1.20
Massachusetts	3,520,031,352	14,194,528	94,038,748	0.40	2.67
Rhode Island	457,831,391	1,752,678	15,622,636	0.38	3.41
Connecticut	1,512,310,982	7,724,766	68,051,510	0.51	4.50
New England	\$ 6,513,469,013	\$ 25,684,306	\$ 195,174,760	0.39%	3.00%
United States	\$118,681,479,000	\$648,152,000	\$3,529,881,000	0.55%	2.97%

*Hospital Statistics 1986, American Hospital Association, Chicago, Ill.

Table 4

**Concentration of AIDS Cases in
New England Hospitals, 1986**

State	Total Short-term General Hospitals in State*	Number of Hospitals in Which AIDS Is Concentrated	Percent of State's AIDS Cases Treated in These Hospitals 1986	Total Number of Beds in High-Concentration Hospitals*	Percent of Total Beds Needed for AIDS in High-Concentration Hospitals, 1986	Percent of Total Beds Needed for AIDS in High-Concentration Hospitals, 1991
Maine	42	2	90%	716	0.50%	4.53%
New Hampshire	29	5	90	1,438	0.19	1.44
Vermont	17	1	68	491	0.14	1.25
Massachusetts	105	3	57	2,020	1.58	10.41
Rhode Island	15	3	90	1,272	0.50	4.32
Connecticut	38	6	60	3,786	0.48	4.23
New England	246	20	63%	9,723	0.65%	4.96%

*American Hospital Association Guide to the Health Care Field, 1986, American Hospital Association, Chicago, Ill.

days of care to AIDS patients, requiring nearly 5 percent of all the beds available in these hospitals (see table 4). At the state level, the 3 high-concentration hospitals in Massachusetts would need to devote more than 10 percent of their combined beds to AIDS care. Since the current average occupancy rate for all patients at these 3 hospitals is nearly 85 percent, the care requirements for AIDS patients would bring these hospitals very near to 100 percent of capacity. In Rhode Island, where the projected 1991 AIDS prevalence is less than one-fifth the level in Massachusetts, the high-concentration hospitals are projected to devote 4.32 percent of beds to AIDS care. These hospitals currently have an

average occupancy rate for all patients of greater than 80 percent, so AIDS care will have a significant effect on their operations. A similar situation exists in Connecticut, where 60 percent of AIDS cases are projected to utilize more than 4 percent of total beds in 6 of the state's 38 short-term general hospitals, and in Maine, where 90 percent of AIDS cases are projected to use more than 4.5 percent of beds in just 2 of the state's 42 short-term general hospitals. The high-concentration hospitals both in Maine and Connecticut currently have average occupancy rates, for all patients, of nearly 80 percent.

Even in states like Vermont and New Hampshire, where AIDS prevalence is low, the high-concentration hospitals will have four to six beds devoted to AIDS in 1991, more if the impact of AIDS-related complex (ARC) is added. The need for four to six full-time beds for AIDS has a significant impact on a hospital. The possibility of a dedicated AIDS unit will need to be addressed urgently in the high-concentration hospitals, even in very low prevalence states.

Additional Epidemic-Based Costs for New England Hospitals

Several factors that were not included in the estimates just described are likely to affect the level of inpatient care for AIDS patients — most notably, the use of the hospital by patients with ARC; the migration of AIDS patients to New England from other states; and the requirement for hospitals to implement universal precautions for all patients.

The preceding analysis focused exclusively on inpatient resource utilization by AIDS patients. While AIDS is the last and most serious stage of HIV infection, earlier manifestations of infection, such as ARC, sometimes involve hospitalization. Estimates of the proportion of all HIV-related hospital bed days that are for ARC rather than AIDS have ranged from 23 to 46 percent.¹³ These studies suggest that estimates of hospital utilization which focus exclusively on AIDS, as strictly defined, may substantially understate the hospital-care requirements of HIV-infected individuals.

Reports from several state health departments and AIDS coordinators in New England indicated that AIDS patients may frequently obtain treatment outside the state in which the case was originally diagnosed. For example, the state health department in New Hampshire reported that at least 20 percent of AIDS patients in the state received some of their care in Boston. There are many anecdotal reports that patients go to Boston in order to obtain therapy under a research protocol. In-migration to New Hampshire and Vermont was also reported for patients in the final stage of the disease who "came home to die." The surveillance system for reporting AIDS cases to the CDC records only the location where a patient was first diagnosed. Therefore, any increases in AIDS prevalence in New England due to migration will not be reflected in CDC data.

Recently, the CDC recommended that "blood and body-fluid precautions should be consistently used for *all patients*," regardless of their HIV status.¹⁴ This entails widespread use of gloves, gowns, masks, goggles, and puncture-resistant containers. The Massachusetts Hospital Association has estimated the direct material costs for these precautions at \$3.35 million for Massachusetts, with much larger costs anticipated as a result of decreased productivity in operating rooms and increased requirements for hazardous waste disposal procedures. Regional estimates of the increased costs associated with these problems are not currently available but may constitute a significant incremental cost to hospitals due, indirectly, to the HIV epidemic:

Alternatives to the Hospital

Alternatives to inpatient care for AIDS patients are often cited as the best way to reduce unnecessary inpatient care and treatment costs. Early in the epidemic, San Francisco General Hospital developed a model of care which involved close coordination between an inpatient unit and a broad array of outpatient community-based services, including counseling, hospice, home care, and housing services.¹⁵ New York State has developed a multidisciplinary AIDS program, the Designated AIDS Care Center Program, which creates incentives for hospitals to coordinate services in and out of the hospital through a case management model. The Robert Wood Johnson Foundation and the Health Resources Service Administration (HRSA) have made extensive grants to twenty-four areas to facilitate coordination and expansion of community-based services. An AIDS service demonstration grant has been awarded by HRSA to the Fenway Community Health Center in Boston. The federal Health Care Financing Administration (HCFA) is encouraging states to apply for Medicaid waivers to include home and community-based services to AIDS patients on a disease-specific basis.

A number of AIDS clinics have been established in New England hospitals which provide outpatient and physician services. Rhode Island Hospital in Providence and Yale-New Haven Hospital in Connecticut have established ambulatory care clinics to treat people with AIDS. Yale-New Haven Hospital has three AIDS clinics that provide primary care and consultative visits. A total of 144 HIV-positive patients are currently registered at the Rhode Island Hospital outpatient clinic. The clinic received 666 outpatient visits between January 1986 and June 1987. In Massachusetts, it is estimated that about 7 to 10 percent of the AIDS patients in the state are currently utilizing ambulatory care services.¹⁶ In addition, there are undoubtedly a large number of persons with ARC who are using ambulatory care services in Massachusetts.

The development of in-home services for AIDS patients who require basic care in activities of daily living is just beginning in New England. The local hospice organizations and the Visiting Nurse Association (VNA) are now providing important in-home services for AIDS patients. Home-care services are being provided to AIDS patients by the Maine Hospice Council, and data from the Department of Public Health in Massachusetts suggest that about 20 percent of the AIDS patients are receiving in-home care, usually provided by hospice and the VNA.¹⁷ Home care for AIDS patients is also being provided by the VNA in Connecticut. The only freestanding hospice in Connecticut, the Connecticut Hospice in Branford, has two beds assigned to AIDS patients.

Active community organizations in New England are playing an important role in servicing the needs of AIDS patients. For example, Rhode Island Project AIDS, the AIDS Action Committee in Boston, and the Maine AIDS Project are providing services such as counseling, advocacy, personal care assistance, case management, and housing assistance. The AIDS Action Committee in Boston has been in existence since 1983. It is staffed with 600 volunteers working with 45 paid staff members, and a budget of \$1.75 million. Approximately 65 percent of the AIDS cases in Massachusetts have utilized the services of the AIDS Action Committee.¹⁸ The Maine AIDS Project provides a buddy program and a hotline service to approximately half of the cases diagnosed with AIDS in Maine. It is staffed with about 150 active volunteers and 2 full-time staff members. As was discovered in San Francisco, Los Angeles, and New York, these volunteer agencies and their support are vital to assuring quality care for AIDS patients.

A number of projects are under way to develop alternatives to hospital care for AIDS patients in New England. For example, in Maine an outpatient clinic is in the process of being established at the Maine Medical Center in Portland. The medical center is also affiliated with a project to establish a live-in center in Portland which would accommodate seven to nine AIDS patients who need care in a sheltered environment. The state has also appropriated \$300,000 for patient-care coordination. In Massachusetts, money has been allocated to fund eight community agencies to provide home care to people with AIDS and to support the costs of a residential program for children with AIDS, and funding is proposed to support two new hospice facilities.¹⁹ An interagency monitoring system for the treatment of AIDS patients is being proposed in Connecticut. One of the objectives of the project is to explore alternative delivery sites; another is to encourage public and community agencies to respond to these approaches for treating AIDS patients.²⁰

The New England states are facing obstacles in the provision of alternative care for AIDS patients. A report from a major teaching hospital in Connecticut stated, for example, that significant numbers of AIDS patients requiring basic nursing services had extended inpatient stays, owing to the lack of an alternative facility. One AIDS patient with dementia at this hospital occupied an acute care medical bed for two years because of the absence of alternative care. Vermont, a state with a relatively small number of AIDS cases, is also facing the lack of alternative treatment sites for AIDS patients.

Skilled nursing facilities (SNFs) may not be prepared to handle AIDS patients. Issues about placement include the lack of available beds and insufficient infection control precautions. Massachusetts has had difficulty placing AIDS patients in nursing home beds because of a shortage of these beds in the state and the general problem of placing a thirty-to forty-year-old AIDS patient in an SNF, where the average age is over eighty.²¹ In Connecticut, the ad hoc Committee on AIDS Economic Impact reported that "it is extremely difficult, if not impossible, to admit AIDS patients to a skilled nursing facility."²² State planning agencies in Connecticut and Massachusetts are considering the alternative of setting aside skilled nursing or subacute care beds for AIDS patients in an acute care setting, not in a long-term care facility.²³

Discussion

As AIDS patients compose larger and larger proportions of the hospital inpatient population, their impact on hospital operations is becoming more pronounced. AIDS patients require more nursing care than the average medical/surgical patient, and they require careful infection control procedures.²⁴ The presence of significant numbers of AIDS patients also engenders the need for staff training and increases the level of required housekeeping service. Moreover, as occupancy rates approach full capacity, the entire range of hospital services and departments feel the impact.

AIDS presents a host of issues to hospitals which become more critical as the volume of patients increases. Staff concerns must be dealt with sensitively. But even with precautions being taken, needle sticks and other accidental exposures will occur. Hospitals need to develop approaches for counseling and follow-up for staff who have such exposures. Physician concerns about exposure sometimes reach levels where they may affect access to care. As AIDS cases increase, these problems are bound to arise in many hospitals. In addition, there will be heightened concerns about confidentiality, quality of care, discharge planning, hiring, and financial effects. AIDS has an impact on nearly every department of the hospital. Even the presence of a few cases requires much rethinking of

established procedures on the part of hospital departments and staff. Perhaps the most important thing hospital administrators and state officials can do is to anticipate the impact of this growing problem and begin now to develop the plans, policies, and procedures necessary for coping. Among the first set of issues that must be addressed are the means to distribute more evenly among hospitals the burden of treating AIDS patients and to plan for the facilities needed to provide alternatives to hospital care.

As the number of AIDS cases begins to increase in areas of currently low prevalence, efforts to train and educate local hospitals to care for AIDS patients need to be encouraged. Massachusetts predicts that by 1991 most counties in the state will have more than fifty AIDS cases.²⁵ Programs need to be funded to develop educational tools and conduct training sessions so that expertise can be shared among physicians, nurses, and administrators.

AIDS is beginning to affect the operation of all hospitals. Implementation of the recent CDC precaution recommendations, described earlier, involves educating employees about HIV transmission and prevention; providing equipment and supplies to prevent transmission; monitoring adherence to recommendations; and developing institutional policy and guidelines for universal precautions.

Hospital Planning for the Epidemic

Hospital planning for New England should urgently begin to address the need of AIDS patients for alternatives to acute care services. Hospitals may begin by developing an integrated system of inpatient care with outpatient clinics. Some hospitals may designate units or multidisciplinary treatment teams to handle a large number of AIDS patients. States may seek funding to develop out-of-hospital services, such as a grant from the Medicaid Home and Community-Based Services Waiver Program of the federal Health Care Financing Administration. States that need to address the issue of fragmentation of care may be encouraged to utilize a case management approach to the care of AIDS patients which coordinates AIDS inpatient care with outpatient treatment, home care, and housing assistance. The case management program may result in the reduction of inpatient service utilization and may help assure appropriate outpatient care. However, even the best case management and discharge planning efforts cannot succeed if there is no place outside a hospital for AIDS patients to go. Each state needs to look closely at its capacity to provide long-term, hospice, and home care and to fill gaps where they exist.

State planning for the epidemic should be addressing the differences in resource utilization which are based on the risk group mix in the state, which affects hospitalization patterns and the spread of the epidemic. A state such as Connecticut, where intravenous drug users (IVDUs) represent 29 percent of the cases and have become the primary source of new AIDS cases, may need a different model of inpatient and outpatient care than Maine, which has primarily a male homosexual AIDS population. A state with a large IVDU AIDS population must deal with the possibility of longer lengths of stay, a need for housing assistance to place the patient after discharge from the hospital, and a reliance on public-sector funding for services.

It is encouraging that all states in New England have established an AIDS task force, either through the local hospital association or through the state government. A thorough report prepared by the Massachusetts Hospital Association AIDS Task Force has assessed the impact of AIDS on the hospital industry in Massachusetts in order to identify gaps in services and prepare for the increasing number of cases in the future. There is a great

need for planning and program development by the New England states to assure that services will be delivered to AIDS patients as the epidemic widens and as its impact on the health care delivery systems of these six states becomes more profound. 🗣️

Notes

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9. Our descriptions of inpatient resource utilization may appear to differ from the analyses by Landers and Seage which also are presented in this volume. Despite their apparent differences, the analyses are fundamentally consistent. Landers and Seage use an incidence-based approach and estimate annualized costs cumulatively through 1991. Our estimates reflect prevalence-based estimates, and estimate hospital utilization during a calendar year. For example, Landers and Seage describe overall days of hospitalization per year to be 62 days. Our estimate of 31 days per case alive in a year appears quite different but is actually consistent, because Landers and Seage have annualized their estimate to adjust for the number of months subjects were in the study. Landers and Seage report an average of 1.6 hospitalizations at 21 days each, which yields 33.6 days of hospital care. This is the number that should be compared with our 31-day estimate. Our estimate was based on hospitals throughout New England, while Landers and Seage base their estimate of days of care on one hospital; this accounts for the small discrepancy between these two estimates. Similarly, Landers and Seage report inpatient costs per patient of \$22,097, which compares closely with our estimate of \$21,638 per patient. Finally, the estimates of the regional impact of AIDS presented by Landers and Seage reflect *cumulative* costs based on cumulative incidence through 1991, while our descriptions of the regional impact of AIDS are based on prevalence estimates for 1986 and 1991 and reflect costs and utilization for each of those two calendar years.
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11. *Ibid.*

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