AIDS IMPACT ON HEALTH INSURANCE

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Overview
The impact of AIDS on health insurance is expected to continue growing for several years as the epidemic expands and AIDS patients live longer. Insurers face greater challenges in medical case management as new treatments for the effects of the HIV virus, which causes AIDS, permit earlier intervention and prolong life.

Several factors are enabling the medical community to intervene prior to the onset of AIDS. Thus, physicians are gradually transforming AIDS into a chronic disease that, like some cancers, can be put into remission for months or even years.

The health care burdens of treating AIDS patients will balloon since many experts predict that the AIDS epidemic in the United States will continue growing through the 1990s. Also, changes are occurring in the risk groups who get AIDS, which impacts who pays for AIDS treatment.

HIV Infection
AIDS is caused by the human immunodeficiency virus, often termed “HIV.” Those infected with HIV remain infected permanently, though the latency period is typically several years before an infected individual exhibits symptoms of HIV-related diseases.

The Centers for Disease Control (CDC) estimated the number of HIV-infected people in the U.S. at 1 million in mid-1989, with a possible range anywhere from 650,000 to 1.4 million. Also, they estimated that at least 40,000 new HIV infections will occur yearly. In fact, the CDC suggested that since 1986, an average of over 80,000 new infections have occurred each year.

Scientists have identified three major transmission modes for HIV—sexual contact, exposure to infected blood and blood products, and transmission from an infected pregnant woman to her fetus. Casual contact with an infected person, however, has not subjected others to HIV infection.

The limited available studies show that the latency period for AIDS is long and variable. In the San Francisco Health Department study, which followed 507 homosexual and bisexual men, the median latency period between infection and the development of full-blown AIDS was 9 years, 8 months. Some 62% were expected to develop AIDS within 12 years after infection. However, the median latency period may differ for people who were exposed to the HIV in other ways.

Initial symptoms are often mild, including night sweats, weight loss or persistent unexplained diarrhea, and swollen lymph nodes. As the immune deficiency worsens, the individual may develop the manifestations of AIDS, including pneumocystis carinii pneumonia (PCP), several infectious diseases, neurological problems, and cancers such as Kaposi’s sarcoma, squamous cell skin cancer, and lymphomas. Many AIDS victims develop wasting syndrome, which may involve severe weight loss.

Changing Treatment Patterns
Medical interventions for the HIV-infected are changing with the administration of new drugs, often earlier to delay onset of disease. New treatments have extended the average life spans of AIDS victims who have health insurance, and thus generally have access to needed medical care, to about 20 to 24 months.

Also, medical care management and therapies often help shift care from acute to chronic settings. For the past four years, physicians have increasingly been able to intervene to slow deterioration of the immune system prior to the onset of AIDS.

Dr. Peter Arno described the challenges posed by earlier treatment of the HIV-infected as follows:

Treating patients who are HIV seropositive before they show signs of clinical deterioration will pose a major challenge… the disease will become a largely chronic condition requiring years of outpatient monitoring and pharmacologic intervention. Such a shift is already underway and is certain to be accelerated by new therapeutic regimens.

Periodic monitoring is necessary to track changes in immune function and allow the appropriate timing of drug intervention. After treatment begins, patients are usually followed up periodically to assess their clinical progress and control adverse side effects of medication.

One of the most widely used drugs for treating patients with HIV is Zidovudine, commonly called “AZT.” Since its initial use in mid-1985, AZT has lengthened the life expectancy and improved the quality of life of many people infected with HIV. AZT inhibits the replication of the HIV virus, thus slowing the damage to the immune system, but it does not destroy the existing virus.

The FDA has approved AZT also for asymptomatic, HIV-infected people who have some immune deficiency but have not yet developed AIDS. Research sponsored by the National Institutes of Health (NIH) showed that AZT can delay the development of AIDS in asymptomatic, HIV-infected people with CD-4 immune cell counts below normal, that is, less than 500.

This research also showed that only one-third the dose of AZT previously used was effective for early intervention and that this lower dose minimized the serious side effects of the drug. The lower dose can be used for as long as three years.
One small study indicated that AZT has more than doubled survival time for AIDS patients. Median survival time for 352 AIDS patients in Maryland was 25 months, compared with 11 to 13 months survival prior to AZT use, which began in April 1987. The authors, however, noted that many of these patients who could afford AZT likely had access to other drugs and medical care services, which also may have contributed to greater longevity.

In 1989, it was estimated that nearly 600,000 Americans had early symptoms of HIV infection and thus could qualify for AZT. Americans at risk who suspect that they may be infected with the HIV virus are encouraged to be treated so that their immunity can be monitored and early intervention begun when immunity weakens.

Currently, AZT costs over $3,000 yearly. One recent study showed the cost effectiveness of AZT, but it is premature to assess whether the costs of AZT are counterbalanced by savings in hospital costs.

The use of AZT in combination with other antiviral drugs is being studied. For example, preliminary results indicated that AZT and dideoxycytidine (ddc) were more effective in combination, giving greater longevity and fewer side effects than AZT alone. (The drug ddc is still in clinical trials, which means that researchers are still checking its safety and effectiveness in treating the HIV-infected, and the Food and Drug Administration (FDA) has not yet approved this drug.)

The FDA has approved several drugs for treating HIV-related diseases. For instance, Pentamidine can be used for both the prophylaxis and treatment of pneumocystis carinii pneumonia (PCP). The disease PCP is a deadly opportunistic infection that afflicted 60% to 70% of AIDS patients in the first few years of the epidemic, and, of those, killed as many as four out of five.

Pentamidine has lowered the risk of PCP. However, some physicians contend that AIDS patients who escape PCP and live longer often have more complex diseases that are more difficult to treat, as well as more frequent neurological complications.

For example, many patients who live longer because they take AZT, develop lymphoma, a cancer of the lymphatic system. After two years on AZT, 12% of HIV-infected develop lymphoma, and after three years 29% develop it, according to a report by Jill Lieitzauf of the National Cancer Institute to the Seventh International Conference on AIDS.

Some clinicians have noted that prolonging life of AIDS victims also increases wasting syndrome. Thus, treatment with total parenteral nutrition, which is given intravenously, is becoming more common. This costs as much as $200 to $600 per day.

Rapid change in AIDS treatment will likely continue because more than 70 new drugs for HIV-infection and AIDS are still in clinical trials. However, health insurers typically have not covered such drugs until the FDA has approved them, though exceptions have been made.

Some new AIDS treatments help patients live longer and better lives. However, costs can be added by periodic monitoring of immune deficiency, early intervention, and expensive drug therapy, though some added costs may be offset by saving hospital costs.

**Projections**

AIDS case loads will increases as the epidemic expands. The CDC, which tracks AIDS cases for the federal government, indicate that through May 1991, 179,136 AIDS cases have been reported. Of these, 113,426—over 63%—were reported to have died. In 1990 alone, there were 34,264 new cases diagnosed, with 24,439 deaths reported thus far. (Due to reporting lag, the 1990 figures are not final.)

The CDC projects that between 52,000 and 57,000 cases of AIDS will eventually be reported as diagnosed in 1990. For 1993, this figure is expected to increase to between 61,000 and 98,000 new cases (see Table 1). By the end of 1993, the CDC estimates that a total of 390,000 to 480,000 Americans will have developed AIDS. The cumulative AIDS death toll will number 285,000 to 340,000, with 53,000 to 76,000 deaths occurring in 1993 alone.

**Table 1**

<table>
<thead>
<tr>
<th>Year</th>
<th>New Cases</th>
<th>Deaths</th>
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<tbody>
<tr>
<td>1990</td>
<td>52,000-57,000</td>
<td>37,000-42,000</td>
</tr>
<tr>
<td>1991</td>
<td>56,000-71,000</td>
<td>43,000-52,000</td>
</tr>
<tr>
<td>1992</td>
<td>58,000-85,000</td>
<td>49,000-64,000</td>
</tr>
<tr>
<td>1993</td>
<td>61,000-98,000</td>
<td>53,000-76,000</td>
</tr>
<tr>
<td>Cumulative through 1993</td>
<td>390,000-480,000</td>
<td>285,000-340,000</td>
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Source: CDC MMWR 1990:39(No. 7)

The number of AIDS cases diagnosed in 1990 appears to be near the lower figure predicted, and some have hailed a slowing of growth in new AIDS cases. Some experts, however, are wary of such conclusions—in fact, what had appeared to be a slowdown during 1989 may simply have been a temporary respite afforded by the widespread use of AZT in delaying AIDS onset.

This hypothesis was supported by National Cancer Institute researchers with data from placebo-controlled clinical trials, pharmaceutical company reports, and the San Francisco men's health study. However, this study found a deficit in AIDS cases among homosexual and bisexual men, particularly in New York City, San Francisco, and Los Angeles. But AIDS case deficits were "virtually absent" among IV drug users.

Despite this respite in the AIDS growth rate, the CDC indicates that AIDS incidence may, in fact, increase at a greater rate over the next few years than it has during the past two years.

CDC statisticians estimate that only 85% of diagnosed AIDS cases are ever reported, so CDC projections are adjusted for this undercounting. (The General Accounting Office, however, claims that studies have revealed that approximately two-thirds of all AIDS cases and other fatal HIV-related cases are ever reported to the CDC.)
Undercounting sometimes occurs because the AIDS definition used by the CDC does not include all serious HIV-related diseases, some of which are fatal. The CDC is considering a change in the “AIDS” definition, which could double the number of Americans classified as suffering from the disease. The new definition would add all HIV-infected people with CD4 cell counts below 200 cells per cubic millimeter of blood. This contrasts with the current “AIDS” definition, which requires that anyone classified as having AIDS must have had one of a specific list of HIV-related diseases.

Questionable Reliability of Projections
These projections, released by the CDC in February 1990, are slightly lower than their previously projected figures, reflecting the revision in the estimates of HIV prevalence in the United States and the delay in AIDS onset caused by new treatments.

The revision in CDC projections illustrates the problems inherent in predicting the growth of the AIDS epidemic. AIDS projections are only rough estimates due to the lack of reliable data on the extent of HIV infection and the rate of new infection, the impact of shifting risk groups, and the effectiveness of treatments for the HIV-infected.

Estimates of the extent of HIV infection are crude. Previous studies of the infection rate focused on specific populations such as civilian military applicants, blood donors, and patients in hospitals or clinics for sexually transmitted diseases.

It’s unlikely that more precise infection rates will become available, because the CDC has abandoned its plan to test a national sample of Americans for HIV. Feasibility studies in Pennsylvania and Texas revealed that those at highest risk for HIV infection were least willing to cooperate. Thus, a full scale survey would underestimate the national infection rate.

AIDS Treatment Costs
The lifetime medical care costs for a person with AIDS is estimated at $85,330 based on an average survival time of 20 months, according to Fred Hellinger of the Agency for Health Care Policy and Research. Of this, an estimated 75% pays for inpatient hospital care (see Table 2). For an HIV-infected person who has not yet been diagnosed with AIDS, the average medical care cost is estimated at $5,150, with nearly 43% paying for drugs such as AZT and aerosol pentamidine.

Table 2
Comparison of Medical Care Costs for Persons with AIDS and HIV-infected without AIDS (1990 dollars)

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>HIV-infected with AIDS</th>
<th>HIV-infected without AIDS</th>
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<tbody>
<tr>
<td>Inpatient</td>
<td>$64,000</td>
<td>$1,240</td>
</tr>
<tr>
<td>Outpatient</td>
<td>10,450</td>
<td>900</td>
</tr>
<tr>
<td>Drugs</td>
<td>10,880</td>
<td>2,210</td>
</tr>
<tr>
<td>Lab. Tests</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>Total</td>
<td>$85,330</td>
<td>$5,150</td>
</tr>
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Table 3 shows Hellinger’s projections of the annual aggregate costs for treating all HIV-infected persons for the period 1991-94. In 1991 alone, the overall cost of medical care for people infected with HIV is expected to surpass $5.8 billion — nearly 85% of this amount will go to caring for patients already diagnosed with AIDS. By 1994, total costs are projected at $10.4 billion for that year, with the proportion of costs for AIDS patients dropping to 76%.

Table 3
Projected Costs for Treating ALL HIV-infected Persons* (1990 dollars, Billions)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>HIV-infected with AIDS</td>
<td>$4.398</td>
<td>$5.444</td>
<td>$6.572</td>
<td>$7.858</td>
</tr>
<tr>
<td>HIV-infected</td>
<td>1.416</td>
<td>1.752</td>
<td>2.116</td>
<td>2.530</td>
</tr>
<tr>
<td>Total</td>
<td>5.813</td>
<td>7.197</td>
<td>8.688</td>
<td>10.388</td>
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</table>

Several health insurers have found that case management can both reduce the costs and improve the quality of treating AIDS patients and other high-cost, catastrophic medical problems. AIDS is a particularly good candidate for case management because treatment is costly and the HIV-related diseases can often be treated in alternative settings outside the hospital.

The case manager, generally a registered nurse with physician backup, assists where needed in coordinating the AIDS patient’s care. The case manager helps ensure that the patient has a comprehensive plan of care and rehabilitation that uses all appropriate types of therapy and equipment, sometimes by extending the patient’s health plan coverage.

AIDS case management has saved as much as 50% of treatment costs, depending on the particular locale and specific AIDS case.

Payers for AIDS Treatment
The limited available data on who pays for AIDS treatment in the United States suggest that most AIDS victims who are homosexual or bisexual have private health insurance, while the majority of IV drug users lack private health insurance and thus often are covered by Medicaid. The authors of this article estimate, based on available data, that in 1991, 35% of AIDS costs are privately insured, 40% are covered by government, mainly Medicaid, and 15% are paid by patients and their families out-of-pocket.

One study showed a marked shift in payer mix with changes in the mix of risk groups. A decreasing proportion of hospitalized AIDS patients in New York City, San Francisco, and Los Angeles have been covered by health insurance. The share of inpatients covered by private insurance declined from 49% in 1984-85 to 43% in 1986-87, while those financed by public sources (mainly Medicaid) rose from 23% to 41%.

Changing Risk Groups
According to the CDC, 89% of AIDS cases in the United States thus far have been men. Of those, 85% have been between the ages of 25 and 50, ages when men typically use relatively little health insurance benefits.
Through May 1991, homosexual and bisexual males comprised 58% of all diagnosed AIDS cases (see Table 4). Intravenous drug users (IVDU) made up the next largest segment with 22%.

The proportion of homosexual AIDS cases has fallen from 65% of all new cases diagnosed during the period 1981-87 to 54% for the most recent 12-month period ending May 31, 1991 (see Table 5). Conversely, the proportion of new AIDS cases attributable to IV drug use has increased from 17% to 23% over the same periods.

The proportion of AIDS cases among females has steadily increased. Females' share of reported AIDS cases constituted 10% during 1988 and 1989, rising to nearly 13% by the end of May 1991.

Another related trend, the heterosexual spread of AIDS, will significantly impact the future growth of the AIDS epidemic.

Table 4
AIDS Cases by Risk Group through May 1991

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>%</th>
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<tbody>
<tr>
<td>Homosexual/bisexual male</td>
<td>58</td>
</tr>
<tr>
<td>IVDU (heterosexual)</td>
<td>22</td>
</tr>
<tr>
<td>Homosexual and IVDU</td>
<td>7</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>5</td>
</tr>
<tr>
<td>Blood products</td>
<td>3</td>
</tr>
<tr>
<td>Pediatric</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>4</td>
</tr>
</tbody>
</table>


Within the last few years, however, the percentages of AIDS victims in these exposure categories have been shifting. Since 1987, the rate of increase in AIDS incidence for homosexual/bisexual males has been declining while that of IV drug users has been rapidly increasing.

Considerable uncertainty surrounds experts' opinions on the likely progression of AIDS into the heterosexual population. Some warn that the current number of HIV-infected heterosexual persons may already be greater than CDC estimates, while others say the probability of widespread infection among heterosexuals is very slim. The determination of growth within this risk group is critical to estimating accurately the future spread of the AIDS epidemic.

Summary
A decade after the AIDS epidemic began in the United States, many unanswered questions remain. Given the uncertain infection rate, and the vital questions concerning the likelihood of heterosexual spread, it is difficult to project the future shape of the AIDS epidemic. Rapid change in AIDS treatment will likely continue.

REFERENCES