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Health Care Policy Issues Related to AIDS: Lessons Learned from the Henry Ford Hospital Experience

David W. Benfer*

Implications of the acquired immunodeficiency syndrome (AIDS) for the nation’s health care institutions are far-reaching. The epidemic is requiring institutional providers to reevaluate the organization of their delivery systems and financing mechanisms to meet the rising needs of the country. The institutional impact of the disease, our experience in Michigan, and the patient care and financial experience of Henry Ford Hospital are discussed, and a strategy to modify the health care delivery system in southeastern Michigan is reviewed. The planned system change, as a response to this epidemic, is proposed by the Greater Detroit Area Health Council Task Force on AIDS.

Background

The first five AIDS cases were identified in the United States early in 1981. Estimates are that the AIDS virus has infected between 1 and 2 million people in the United States. Some experts have projected that the virus will infect up to 5 million people by 1991. This estimate may not seem extreme when considering the number of individuals infected with the AIDS virus but without symptoms and those with the AIDS-related complex (ARC). As a result of these projections and the geometric expansion rate of this deadly disease, AIDS has become the nation’s number one public health priority and has probably generated more interest on a political, social, community, and media level than nearly any other disease in this century. The high level of professional and public interest is not surprising: full-blown AIDS has a 100% mortality rate and no known cure.

Complicating the health care challenge is the demand that AIDS patients place on the health care system. According to a National Academy of Sciences report released in October 1986: “By 1991, AIDS cases will require more than 1 percent of all hospital beds nationwide and will represent more than 3 percent of hospital costs” (1). This projection may not seem to place unnecessary demands on the system due to the current surplus of inpatient hospital beds. However, because of the nature of the disease, this perception that the current system has the capacity to manage the projected AIDS patient volume by 1991 is unrealistic. As reported in Newsweek (2):

Cook County Hospital—Chicago’s primary public medical center—expects about 7,000 active cases of AIDS by mid-1990, a massive increase from [1986]. But that total is dwarfed by the projections for New York City, where health planners foresee nearly 14,000 cases in 1991.

According to Kenneth Raske, president of the Greater New York Hospital Association, New York City will require an additional 1,000 beds to cope with the AIDS crisis (2).

The strain on the health care delivery system will occur because not one good system for managing the AIDS patient population is in place in the United States. Current patient volume is not uniformly distributed throughout the population, but tends to be focused in urban areas with large homosexual and intravenous drug user populations (Table 1). As the exposed population grows in number exponentially and as the disease begins to manifest itself beyond the primary high-risk groups, problems for the health care delivery system will start to develop in the less densely populated areas of the country.

The Michigan Experience

Michigan has been a relatively low incident area for AIDS. As of May 11, 1987, the state had identified 329 persons with AIDS. After homosexuals, the intravenous drug abuse population has the second highest incident rate of AIDS. Southeastern Michigan reportedly has the second or third highest rate of heroin addiction in the country, and according to the Michigan Department of Public Health, 15% to 23% of new AIDS cases are...

Table 1

<table>
<thead>
<tr>
<th>City</th>
<th>AIDS Cases Per 100,000 People</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>91</td>
</tr>
<tr>
<td>San Francisco</td>
<td>91</td>
</tr>
<tr>
<td>Jersey City</td>
<td>60</td>
</tr>
<tr>
<td>Miami</td>
<td>53</td>
</tr>
<tr>
<td>Newark</td>
<td>37</td>
</tr>
<tr>
<td>Fort Lauderdale</td>
<td>33</td>
</tr>
<tr>
<td>Houston</td>
<td>33</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>32</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>26</td>
</tr>
<tr>
<td>Atlanta</td>
<td>22</td>
</tr>
<tr>
<td>Dallas</td>
<td>17</td>
</tr>
<tr>
<td>Boston</td>
<td>16</td>
</tr>
<tr>
<td>Long Island, NY</td>
<td>12</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>11</td>
</tr>
<tr>
<td>Chicago</td>
<td>9</td>
</tr>
</tbody>
</table>

The US average is 13 cases per 100,000 people. Excluding these metropolitan areas, the rate is five per 100,000.

Note: Figures are cumulative from June 1981 to December 1986 for metropolitan areas reporting at least 300 cases.


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traceable to intravenous drug users. Thus the rise in AIDS cases among intravenous drug abusers in Michigan is just beginning. Education and detoxification programs are essential if Michigan is to remain a low incidence area.

In October 1985, after recognizing the potential for a significant increase in the incidence of AIDS in Michigan, the Public Health Department appointed an Expert Committee on AIDS to develop program and policy recommendations for the state. The recommendations focused on surveillance, testing, counseling, laboratory services, education, continuum of care, and continuing policy development. Unfortunately, Michigan has just seen the tip of the AIDS iceberg (Fig 1).

While statewide strategies are evolving to improve the management of the AIDS population, care of the AIDS patient is

Fig 1—AIDS: Tip of the Michigan iceberg. The methodology for extrapolating the number of AIDS cases, AIDS-related complex (ARC) cases, and HTLV-III infected but asymptomatic persons nationally and in Michigan was determined as follows:

National figures for AIDS, ARC cases, and infected but asymptomatic persons were taken from the Wall Street Journal, June 3, 1986.

The Greater Detroit Area Health Council Task Force on AIDS reported 175 cases of AIDS as of June 9, 1986.

Current estimates of ARC cases in Michigan were extrapolated from the most recent reported cases of AIDS and from current national estimates (five to ten times as many ARC cases as AIDS cases).

Current estimates of infected, asymptomatic individuals in Michigan were extrapolated from current estimates of ARC cases (ten times as many infected, asymptomatic individuals as ARC cases).

Projected estimates for 1991 of national AIDS cases were extrapolated from current estimates of infected, asymptomatic individuals (5% to 25% of the currently estimated 1.6 to 3.3 million asymptomatic individuals infected with HTLV-III virus nationwide will develop AIDS).

Projected estimates of national ARC cases were extrapolated from current estimates of infected, asymptomatic individuals (25% of the currently estimated 1.6 to 3.3 million asymptomatic individuals infected with HTLV-III virus nationwide will develop ARC).

Projected estimates of national infected, asymptomatic individuals were extrapolated from current estimates of infected, asymptomatic individuals and from projected estimates of ARC cases (ten times as many infected, asymptomatic individuals as ARC cases).

Projected estimates of Michigan AIDS cases were extrapolated from current estimates of infected, asymptomatic individuals (5% to 25% of the currently estimated 15,000 to 30,000 asymptomatic individuals infected with HTLV-III virus in Michigan will develop AIDS).

Projected estimates of Michigan ARC cases were extrapolated from current estimates of infected, asymptomatic individuals (25% of the currently estimated 15,000 to 30,000 asymptomatic individuals infected with HTLV-III virus in Michigan will develop ARC).

Projected estimates of Michigan infected, asymptomatic individuals were extrapolated from current estimates of infected, asymptomatic individuals and from projected estimates of ARC cases (ten times as many infected, asymptomatic individuals as ARC cases).

presently focused on the acute care environment. Alternatives to the acute care model are essential to control the cost of the epidemic. Table 2 demonstrates the cost savings available to the health care system if the continuum of care model is implemented in Michigan.

The Hospice of southeastern Michigan will not be accepting AIDS patients even for home care until July 1, 1987, and only one nursing home in the state currently accepts AIDS patients. As of April 1, 1987, the Michigan Medicaid program began to pay for hospice care and should facilitate AIDS patients' access to hospice programs, which are being developed by other providers including Henry Ford Hospital. Two group homes for AIDS patients are also being developed in Detroit; however, this will not alleviate the problem of the need for acute care beds. Massachusetts, for example, announced that the state will spend more than $4 million this year to support AIDS research, home care, hospice services, and educational programs.

### Cost of Care

The Centers for Disease Control (CDC) in Atlanta estimate that the national cost per day for an AIDS patient is $830. Although this estimate varies regionally from $1,000 in New York City to $878 in San Francisco to $963 in Los Angeles, one point is clear: all figures are nearly double the average daily cost for treating other patients. When evaluating the cost of care for an AIDS patient, a substantial variation exists in total system cost between the acute care model and the continuum of care model.

In New York City, where care is provided primarily by acute care general hospitals, the cost of managing an AIDS patient from diagnosis to death is approximately $150,000. At the other extreme, in San Francisco, where an AIDS patient is managed in a continuum of care by being placed in the lowest cost and most appropriate setting for care, the total cost from diagnosis to death is reduced to approximately $30,000. A dramatic example of the cost variation between these two extremes in the state of Michigan is shown in Table 2. The potential statewide savings from a well-organized system exceeds $600 million.

### Henry Ford Hospital Experience

Great demands are placed on urban institutions, since many homosexuals and intravenous drug abusers cluster in urban areas. For example, as of December 1986, 36% of all reported AIDS cases which occurred in the state of Michigan were cared for at Henry Ford Hospital. The majority of these cases originated in southeastern Michigan, which is Henry Ford Hospital's primary service area. Resource consumption is extremely high in urban hospitals such as Henry Ford Hospital. Obviously, the care of any infectious disease patient is expensive; however, a disease such as AIDS is even more costly because of required multiple hospitalizations during the course of the illness. Many patients require intense one-on-one nursing care support due to the debilitating nature of the disease, and strict adherence to infection control procedures is necessary. Producing educational programs for staff who provide direct patient care as well as for those who support the health care process are other significant institutional costs for hospitals caring for AIDS patients. Special educational programs have been developed for not only the nursing and respiratory therapy staff but also for social service personnel, housekeepers, dietetic workers, laboratory and radiology staff, operating room staff, as well as for those involved in pastoral care and volunteer and public relations activities. Commitment of major institutional resources is necessary for the patients' emotional, psychosocial, family, and financial condition.

Early in 1985, Henry Ford Hospital experienced an increase in the number of AIDS patients' admissions, because of the expertise of the hospital's Infectious Diseases division. Concurrently, the local media were writing feature stories on AIDS and its impact on southeastern Michigan. Thus Henry Ford Hospital experienced concern not only from family members of patients scheduled to be admitted for elective procedures, but also from the employee population regarding the risk of acquiring this disease. As a result, Henry Ford Hospital took the initiative to convene, through the Greater Detroit Area Health Council, a task force to focus on developing a strategy for southeastern Michigan to help maintain it as a low incidence area for AIDS.

At Henry Ford Hospital, one-half of a floor's unit has been devoted to caring for AIDS patients. Although these 12 rooms have the capacity for 24 beds, they have been restricted to one-person isolation rooms. These rooms, along with several other isolation rooms throughout the hospital, are generally always filled with AIDS patients.

The economic aspects of this disease are devastating to a hospital. We have estimated that Henry Ford Hospital has currently lost revenue on AIDS patients equal to 32% of gross billings. In other words, we are being reimbursed and/or collecting a significantly lower percentage of the cost of care per AIDS patient than for the average Henry Ford Hospital patient. Table 3 reflects the summary of gross billings, net collections and losses, for our current AIDS population (January 1, 1983, through March 31, 1986), reflecting a $1.5 million loss. Table 4, which projects the growth in the AIDS patient population in constant dollars, shows a $31 million cumulative loss to Henry Ford Hospital for the management of these patients under our current reimbursement system through 1991.

With the development of drugs like azidothymidine, which extend the life expectancy of AIDS patients, we can anticipate an increase in these costs and losses. This concept of increasing cost with increasing quarters of patient care activity is shown in Table 5. These figures do not include any loss associated with turning a 24-bed unit into a 12-bed isolation unit or from the creation of additional isolation rooms throughout the hospital for the AIDS patients. With a conservative estimate of an 80% utilization rate and based on a total daily reimbursement of $790, this has resulted in an annual reduction of approximately $2.85 million in revenue for Henry Ford Hospital.

### Table 2

**Projected Michigan AIDS Cases and Costs of Care**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cases</th>
<th>Cost of Care per Patient</th>
<th>Total Cost of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>555</td>
<td>$30,000*</td>
<td>$16,650,000</td>
</tr>
<tr>
<td>Current</td>
<td>555</td>
<td>$150,000†</td>
<td>$83,250,000</td>
</tr>
<tr>
<td>1991</td>
<td>5,550</td>
<td>$30,000*</td>
<td>$166,500,000</td>
</tr>
<tr>
<td>1991</td>
<td>5,550</td>
<td>$150,000†</td>
<td>$832,500,000</td>
</tr>
</tbody>
</table>

*Continuum of care model.
†Acute care model.
Henry Ford Hospital currently manages approximately 36% of the diagnosed AIDS cases in Michigan (Table 6). Without changes in the reimbursement system, the demand and economic burden placed on Henry Ford Hospital could have a devastating impact on the financial future of the institution.

**Planned Solutions in Southeast Michigan**

Several solutions to the problem of institutional management of AIDS patients deal with the development of improved mechanisms for reimbursement and of a system for the management of this care. In the fall of 1985, the Greater Detroit Area Health Council convened a task force to address the issue of AIDS in southeastern Michigan. The charge to this task force was as follows (3):

1. To develop a coordinated effort among hospitals and related health care providers designed to promote the availability of high quality care to AIDS patients; develop a total health care program, including acute inpatient, outpatient, chronic, home health, hospice, psycho-social and related services; advocate appropriate financing for such care and educate high risk groups and the general public regarding proper prevention techniques.
2. To seek grant support for research into clinical and/or management aspects of the AIDS epidemic.
3. To develop a plan to maintain southeastern Michigan as a low incidence area for AIDS.

The general recommendations of the task force were as follows (4):

1. The rights of the individual person with AIDS to privacy and confidentiality are basic rights and should be protected.
2. Similarly, the rights of individual persons without AIDS to personal safety and the application of proper prevention precautions are also basic and should be protected.
3. An epidemiological model, such as the one illustrated in [Fig 2], should be adopted as a tool for conceptualizing the AIDS problem, for evaluating the components of a comprehensive community effort for addressing the AIDS epidemic, and as a framework for planning a regional system of high quality and cost-effective services for persons with AIDS.
<table>
<thead>
<tr>
<th>HEALTH PROMOTION</th>
<th>PATHOGENESIS</th>
<th>PREPATHOGENESIS</th>
<th>SPECIFIC PROTECTION</th>
<th>EARLY DIAGNOSIS AND PROMPT TREATMENT</th>
<th>DISABILITY LIMITATION</th>
<th>TERMINALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Education Programs</td>
<td>- change in attitude towards AIDS</td>
<td>- homosexual males</td>
<td>Diagnosis Clinics</td>
<td>Treatment Centers</td>
<td>Physical and Psychological Rehabilitation and Education Programs</td>
<td>- occupational and vocational treatment</td>
</tr>
<tr>
<td>- factors associated with AIDS</td>
<td>- females having sexual contact with persons at risk</td>
<td>- blood and blood products</td>
<td>Detection Centers</td>
<td>Organized Discharge Planning</td>
<td>- adjustment counseling</td>
<td></td>
</tr>
<tr>
<td>Improvement in Hygienic Practices</td>
<td>- heterosexual persons with multiple partners</td>
<td>AIDS Management Guidelines</td>
<td>- physician offices</td>
<td>Observation and Follow-up Mechanisms Objectives</td>
<td>- support groups and counseling</td>
<td></td>
</tr>
<tr>
<td>Environment and Sanitation Practices</td>
<td>Elimination or Protection</td>
<td>- standards of care</td>
<td>- outpatient centers</td>
<td>Attention to Convalescent and Extended Care</td>
<td>Coordination with Community Agencies</td>
<td></td>
</tr>
<tr>
<td>Recruitment and Training of Specialists</td>
<td>Against Known Routes of Transmission</td>
<td>- hospital training</td>
<td>- health department</td>
<td>- skilled nursing care centers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased Index of Suspicion</td>
<td>- blood and blood products</td>
<td>- continuing education</td>
<td>- methadone clinics</td>
<td>- home care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- data collection and monitoring of incidence of AIDS</td>
<td>AIDS Management Guidelines</td>
<td>- staging and classification system</td>
<td>- drug treatment centers</td>
<td>- palliative care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual Hospital AIDS Care Committee</td>
<td>Hospital Training</td>
<td>Clinical Research</td>
<td>Health Fairs</td>
<td>hospice care</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- in-service education</td>
<td></td>
<td>Screening High Risk Groups</td>
<td>1. home care only</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- continuing education</td>
<td></td>
<td>Selective Physical Exams</td>
<td>2. outpatient</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- staging and classification system</td>
<td></td>
<td>Detection of Lesions</td>
<td>3. inpatient and outpatient</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig 2—Disease process for AIDS. (From the Report of the Task Force on AIDS, Greater Detroit Area Health Council, Inc, April 25, 1986. Reprinted with permission.)

4. Every effort should be made to pursue available governmental and philanthropic grant support in order to facilitate the planning and clinical goals of this report.

The task force on AIDS divided its responsibilities among four main subcommittees to address the issues of 1) patient care organization and delivery, 2) financing, 3) targeted high-risk group education, and 4) community education. Specialists from southeastern Michigan representing five local hospitals, the area health council, hospital council, and dental society, the medical society, and the state, county, and city health departments all participated in these subcommittees to develop detailed recommendations for the region. The two subcommittees that have the most impact on Henry Ford Hospital and its future as a provider of care for AIDS patients are 1) the Patient Care Organization and Delivery Subcommittee and 2) the Financing Subcommittee.

The Patient Care Organization and Delivery Subcommittee made the following recommendations (4):

A coordinated regional program should be established in southeastern Michigan for the purpose of caring for patients in the acute and chronic stages of AIDS, including inpatient, ambulatory and home health services. A consortium of major providers willing to share information essential to patient care and research, and qualified to provide a comprehensive range of high quality services to AIDS patients should be identified. The role of each member of the consortium should be clearly defined in order to enhance the service and avoid unnecessary duplication; and formal referral arrangements and/or affiliation agreements among the various providers in the consortium should be developed to link the multiple organizations and individuals involved into a unified network of appropriate services.

Facilities dedicated to the acute care of AIDS patients should commence as soon as possible. This could be a single facility or several, depending upon the need and should be sponsored by those hospitals formally participating in the regional program.

AIDS patients should receive care in the least cost setting, consistent with high quality service. A formal case management activity (including discharge planning) is an essential ingredient of a cost-effective system and should be established as part of the regional program in order to assure that optimal utilization occurs.
The experience at San Francisco General Hospital’s AIDS unit suggests that concentrating the management of AIDS at a select facility or facilities which are specifically organized and prepared would provide the highest quality and lowest cost model. In my individual opinion, this would be possible in southeastern Michigan by the existing major providers of AIDS care working with an underutilized acute care facility to be identified as the focal point for nontertiary AIDS care. Medical staff privileges should be granted to all area infectious disease specialists desiring privileges. The case management continuum should be developed around this facility, which should include secondary inpatient hospital care, an area with less intense staffing for long-term care, as well as a hospice unit. In addition, home care should be developed as an integral part of the case management continuum of care model. Intensive care, when needed, would be provided by qualified medical centers in the community. By developing a specialized hospital or section of a hospital for AIDS patients, I believe a better care environment for nontertiary care could be developed and cost shifting would be avoided, resulting in a lower cost model.

The Financing Subcommittee made the following recommendations (4):

Legislation should be enacted to prohibit insurance policies in the state of Michigan from excluding payment for the treatment of AIDS. Insurers should be required to continue to pay for services needed by those of their insured who contract AIDS in the same manner as they pay for those of their insured having any other illness. Legislation should be enacted to define patients in the later stages of AIDS as having catastrophic illness so that they may qualify as disabled and be eligible for Medicare benefits.

The latter two financing recommendations could have a significant impact on Henry Ford Hospital and the projected 32% loss rate for AIDS patients (Table 4). If insurers were mandated to provide the cost of care and if AIDS patients became eligible for Medicare, the hospital would be reimbursed for the costs of rendering services to AIDS patients rather than subsidizing the care under the current insurance situation. A major lobbying effort will be required to have AIDS identified as a catastrophic illness under the Medicare program due to the federal budget deficits and lack of legislative support to finance a specific disease.

Conclusion

The recommendations of the Greater Detroit Area Health Council Task Force on AIDS were approved by the governing body of the organization. A grant application was submitted to the state of Michigan, and funding was approved to implement this strategy in southeastern Michigan. The task force is in the process of implementing the recommendations, with the assistance of staff funded by the Michigan Department of Public Health grant.

Since the only solution to the AIDS crisis in the United States is either the development of a cure for the disease or a vaccine to prevent its spread, the health care system must develop strategies to manage the epidemic until either a cure or vaccine is developed. The most appropriate approach to this crisis, in my opinion, is to develop a case management approach for all AIDS patients in Michigan, mandating a continuum of care approach in order to be reimbursed by Medicaid or Medicare funds. In my opinion, one or more acute care providers should be identified on a regional basis to serve as the focal point of this nontertiary continuum of care. This will assure appropriate social services and discharge planning for outpatient/inpatient, long-term, hospice, and home care for AIDS patients and will provide an organized rather than fragmented process for management of the disease. System organization supported by the proposed reimbursement requirements would provide the necessary financing to ensure a stable patient care environment of high quality and will optimize regional resources to ensure that the most appropriate care is provided in the lowest cost setting. This is truly a challenge to area health care providers as it requires all institutions to set aside "ego" for the overall benefit of community health care.

With all health providers in Michigan working together, a comprehensive case management system can be developed to provide high-quality continuum of care to AIDS patients in a cost-effective delivery system. An organized case-managed approach will enhance the care of the patients while saving the health care delivery system millions of dollars. This system approach will complement the tertiary role the large urban hospital has played, to date, in the management of this disease. The case management approach, when integrated with a care continuum that provides alternatives to inpatient hospital services, will enhance the quality of life for the AIDS patient and will free up valuable health care resources through a more cost-effective system.

It is important to recognize that when health care providers in different geographic regions work together, they can design a system of care that provides the most appropriate care for the patient in the least costly setting. This system, when implemented, should enhance the holistic management of the patient’s medical, social, and economic situation while optimizing the use of acute care hospital resources.

References