

West Virginia State Health Plan

*Financing and Cost Considerations**

I. BACKGROUND

Health care costs, and the average person's ability to afford needed care, have been major social concerns for decades, and there is little likelihood that this will change soon. More than 30 years after the advent of Medicare, and nearly as long since most federal/state Medicaid programs were established, economic barriers to the receipt of health services remain an enduring problem for many families. The numbers of uninsured and underinsured persons continue to grow, even in times of relative prosperity. Recent estimates put the number of uninsured at more than 43 million persons, nearly 16% of the national population. Millions more are in plans or holding indemnity policies that offer only limited coverage. These numbers are growing at about one million persons a year because of labor market changes that have resulted in a smaller percentage of workers obtaining health insurance as an employment benefit.

National experience in recent years illustrates the nature of the problem and the difficulty of addressing it directly. Aside from a comparatively mild recession in the early 1990s, the national economy has been unusually strong over the last decade. Following the brief economic downturn in 1991-92, momentum appeared to be building toward fundamental changes in the way health care is organized, financed, and delivered. When health care reform failed in 1994, and the national economy improved, the near-term prospect of large scale changes evaporated. Attention shifted to smaller, incremental changes at the state and local levels and to market changes, especially in the form of managed care organization, delivery, and payment. Central concerns appear to have shifted from universal coverage and access to the prospect of increased efficiency and cost control. If history is a guide, interest in larger scale approaches to improving the financing and affordability of health care are likely to await either the return of more difficult economic times that threaten larger numbers of those now reasonably well insured or a growing dissatisfaction with the excesses of managed care to reach critical mass.

Notable changes in the system in recent years have been in the way health care is purchased and delivered rather than in the ability to afford it. Responding to rapidly rising health care costs in the 1970s and 1980s, employers began restructuring health benefits programs to gain better control over costs. Initial steps taken by many larger companies were the development of self-insurance schemes to reduce overhead costs and the institution of greater employee cost sharing and other economic incentives to stimulate cost-consciousness among those insured. Both private and public employers soon moved beyond self-insurance and incremental cost-reduction strategies to a broader, more comprehensive approach through various forms of managed care. Most of these shifts have occurred during the last decade, with the rate of change varying considerably among regions and states.

Currently, private and public employers alike, as well as those administering the Medicare and Medicaid programs, are using a number of strategies and techniques to strengthen their purchasing power and increase economic competition among health care providers and managed care plans. Providers and health plans have responded to these pressures by developing a variety of new organizational and financing arrangements.

*Note: tables and maps referenced but not contained here may be viewed and obtained, in their entirety, as the West Virginia Health Care Authority.

Some of the results so far have included greater vertical and horizontal integration of the delivery system, consolidation of facilities and services, and a substantial increase in the reliance on managed care. The degree of managed care penetration (the proportion of the population enrolled in managed care insurance plans) varies widely by state and community, but the principles and practices characteristic of most managed care plans are now endemic.

II. SYSTEM ASSESSMENT

Financing and cost control efforts in West Virginia are nearly as distinctive as the state's geography and demography. There is an unusually high dependence on public health insurance programs. About 18% of the population are Medicare enrollees and nearly 20% are Medicaid recipients. Approximately 18% are uninsured. Of the total population, only 40% to 45% have private health insurance at any given time. Of those persons under 65 years of age, i.e., excluding most Medicare-eligible persons, about two-thirds (66%) are covered by private health insurance. The majority of those, about 60%, obtain their coverage through their place of employment. Both the dependence on public health insurance programs and the uninsured level are higher than those of the nation and those of neighboring states (Table AR 1, entries 95-125). Conversely, the level of private insurance is lower than that of the nation and of contiguous states.

West Virginia has a comparatively low managed care penetration level. Only a handful of managed care plans (7) offer coverage, while only about 12% of the population is insured under managed care plans. State health officials have undertaken a number of notable initiatives to try to encourage the development of managed care options and to otherwise better manage health care resources, control costs, and improve quality. The more substantial efforts are summarized below.

A. Medicaid Managed Care

Federal policy and regulations allow states to obtain waivers of certain provisions of Medicaid operating requirements in order to permit the program to be tailored to the needs of the state and the populations to be served. Most waivers are sought to permit states to develop some form of managed care for some or all of its Medicaid-eligible population. Section 1115 waivers (Section 1115 of the Social Security Act) usually are requested to expand Medicaid program eligibility and coverage to low-income persons that federal rules do not require to be covered. Waivers vary considerably from state to state, and multiple waivers can be obtained by a state. Most of the Section 1115 waivers requested are sought to implement managed care plans tailored to the needs of the applicant state. Fifteen states now have Section 1115 waivers in effect, some of them statewide, and nine others have applications pending. West Virginia has not sought a waiver to expand or extend Medicaid program coverage under Section 1115.

West Virginia has obtained 1915(b) and 1915(c) waivers (Sections 1915[b] and 1915[c] of the Social Security Act) to permit it to institute case management for Medicaid enrollees statewide, to establish a risk-based managed care program for a 15-county area, and to offer alternative home and community-based services for selected mentally retarded, developmentally disabled, and aged and disabled enrollees. These waivers have been in effect since 1993. The Section 1915(b) waivers are in force, but have encountered difficulty in terms of the availability of managed care plans with which to contract and with physician participation. The Section 1915(c) waiver appears to be working well, serving more than 5,000 persons annually at costs far below those that would be incurred if the recipients were required to obtain institutional care.

1. Mountain Health Trust (MHT)

The West Virginia Bureau of Medical Services (BMS), the state Medicaid program, initiated its risk-based managed care plan, Mountain Health Trust (MHT) in 1996. More than 45,000 Medicaid enrollees in 12 of the 15 counties included in the waiver (four centered around Charleston in the southwest and the 11 northwest tier of counties) are enrolled in one of three health maintenance organizations (Carelink Health Plan, Optimum Choice, and Health Plan of the Upper Ohio Valley) with which BMS contracts to provide care. MHT is a typical Medicaid managed care plan, but it does not include pharmacy, long-term care, behavioral health benefits, or non-emergency medical transportation services. Plans are under way to implement the program in three counties now authorized but yet not active and to expand it to eight additional counties.

BMS tries to promote service and system coordination by encouraging and structuring economic incentives for the managed care contractors to incorporate West Virginia's local health departments, primary care centers, and small rural hospitals in their network service contracts and arrangements. BMS policy favors capitated risk-based managed care over its less-structured case management fee-for-service model. In counties where both MHT and Physician Assured Access System (PAAS) are available, Medicaid recipients are required to be enrolled in MHT.

2. Physician Assured Access System (PAAS)

More than a third of West Virginia's Medicaid recipients, about 70,000 persons, are enrolled in its primary care case management program (PCCM) known as PAAS (Physician Assured Access System). Like Mountain Health Trust, this program also was developed under a 1915(b) waiver granted in 1992, but it is not fully capitated or risk-based. It is a fee-for-service program that pays physicians a small monthly fee per member to serve as a 'case' manager for the enrollee. The participating provider serves a 'gatekeeper' function by controlling (authorizing) the access of enrollees to certain costly services.

PAAS is the only link to the health care system, particularly to physician services, for many of West Virginia's poor. As envisioned by BMS, primary care case management is intended to:

- provide the critical link to the health system for enrollees;
- assure access to care for difficult-to-serve clients;
- improve continuity of care across service settings, and
- manage service delivery more effectively by requiring informed authorization for services and, thereby, reduce inappropriate use of services.

PAAS uses a variety of practitioners, including nurse practitioners, as primary care providers. Nevertheless, limited physician participation has been the major obstacle to expanding PAAS enrollment. Only about 500 of West Virginia's more than 3,500 physicians have signed up as participating providers under PAAS. As is often the case elsewhere, the lower-than-desired provider participation levels, largely the product of comparatively low payment levels and the inherent difficulty of case management, reduce the efficiency and effectiveness of the program.

3. Children's Health Insurance Program (CHIP)

West Virginia's Children's Health Insurance Program (CHIP) plan, submitted under Title XXI of the Social Security Act, was approved in September 1998. The state qualifies for approximately \$23 million annually in federal monies under the program, provided it matches the federal grant with approximately \$5 million. Like the majority of states, West Virginia's CHIP program is being implemented through the extension of Medicaid program benefits. The plan expands Medicaid coverage in two phases. During phase one, initiated July 1, 1998,

regular Medicaid coverage is extended to uninsured children ages 1 to 5 years old residing in families with annual incomes of between 133% and 150% of the federal poverty level (FPL). Heretofore, eligibility ended at 133% of the FPL. More than half of the projected 700 children eligible for the new coverage were enrolled within the first few months of the program. Notably, the outreach effort to locate children eligible for CHIP produced an even larger number of uninsured children who qualify for Medicaid coverage at the lower coverage levels (up to 133% FPL). It is also noteworthy that the modest nature of the phase one program required the accelerated implementation of phase one to ensure that the state did not forego part of the FY98 funds for which it was eligible.

Phase two of the program will expand coverage to children ages 6 through 18 living in families with incomes up to 150% of the poverty level. Children in this age group are now covered only if they reside in families with incomes at or below 100% FPL. It is estimated that about 10,000 uninsured children are eligible for coverage under phase two. As is true in many states, when fully implemented the Children's Health Insurance Program will be the most significant step taken in recent years to improve access to care among the state's poor.

All of these initiatives are ongoing and enjoying a measure of success.

III. PROBLEM STATEMENT

West Virginia faces unusually difficult health financing and access problems. The population is comparatively old and aging more rapidly than the nation and neighboring states. Nearly all health measures are more negative than those found nationally or in nearby states. These circumstances are compounded by the relatively low socioeconomic status of the population and the distribution of two-thirds of it over a large, rugged rural landscape. These conditions are found generally statewide; nearly all counties have indices that compare unfavorably with those found nationally and in nearby states (Maps AC-1 through AC-22).

There is a marked dependence upon public insurance plans, largely Medicaid and Medicaid, and a comparatively large percentage of the population is uninsured. Thus, a relatively small proportion of the population has private health insurance. These circumstances limit severely the options available to health officials to take steps that may be desirable, both to stabilize the system and to restructure it.

Health care officials will need to marshal systematically all of the resources available and ensure that they are used as effectively as possible if significant progress is to be made.

IV. ANALYSIS

A. Appropriate Use of Services

1. Acute Care Community Hospitals

Ensuring the appropriate use of services is one of the more effective ways of controlling costs while improving both quality and access to care. Although the state has a comparatively low physician-to-population ratio (Table AR-1, entries 126-153) and unusually high morbidity and mortality levels, there are indications that the use of inpatient health care services in West Virginia may be higher than is appropriate. Acute care community hospital locations and comparative hospital use rates for 1994 and 1997 by county are shown on Maps AC-23 and AC-24. In recent years West Virginians have generated about 150 discharges and between 800 and 900 days of inpatient

care per 1,000 persons in acute care community hospitals. The average length of hospital stays is also higher than the national average and those of most nearby states. Admissions, patient days, and the average length of a hospital stay have fallen by roughly 15% to 20% (depending on the point of reference and the array of inpatient services included in the counts) since peaking in 1994. Nevertheless, current use levels remain considerably higher than national rates and those in most nearby states (Table AR-1, entries 80-94).

2. Surgical Services

Surgical data show a similar pattern. As with inpatient care generally, overall surgical rates are higher than those found nationally and in contiguous states (Table AR-1, entries 80-94). As in most other states and nationally, total surgical demand has increased modestly (about 2%) since 1994, and there has been a marked shift from inpatient to outpatient surgery. Inpatient hospital surgery volume in West Virginia decreased by 23% between 1993 and 1997, and outpatient demand increased by 25%. The proportion of hospital surgery that is done on an outpatient basis rose from 51% to more than 63%. This shift is consistent with national trends, and given that the proportion of surgery undertaken in licensed surgery facilities that is outpatient averages more than 75% in many communities in nearby states, is likely to continue for some time. This shift also points to the crucial role ambulatory surgery plays, and will continue to play, in the viability of essential community hospitals. The system is highly vulnerable to being undercut by the development of proprietary free-standing surgery facilities that drain away patients and revenue.

Other indications of the potential over use of services come from summary state Medicare patient profiles. These data show, among other things, that in 1996 (the most recent year for which comparable data are available) overall surgery rates for West Virginia Medicare patients were about 15% higher than for all Medicare recipients, and higher than the rate in all contiguous states. Notably, West Virginia Medicare patients also had:

- the second highest hospital discharge (admission) rate for the seven surveillance diagnostic groups;
- unusually high coronary bypass (CABG) and carotid artery surgery rates;
- the highest rate of emergency room visits for the top surveillance diagnostic groups;
- unusually high sex- and age-adjusted in-hospital mortality rates following hysterectomy, cholecystectomy (gall bladder surgery), and prostate surgery, and
- average hospital readmission rates at two days, but much higher-than-average readmission rates at 30 days (readmitted within two to 30 days of discharge) for patients with acute myocardial infarction (heart attack), congestive heart failure, chronic obstructive pulmonary disease, and pneumonia.

It is unclear how much of these high use levels reflect genuine, unavoidable inpatient and surgical needs that flow from an older, more debilitated population. The divergence is so great and consistent, however, that it raises a number of questions that need to be examined carefully. The answers have significant cost, access, and quality implications. Analyses of these patterns for all hospital discharges would be instructive.

3. Long-Term Nursing Care

Expenditures for long-term nursing care (nursing home) services have constituted the fastest rising part of state Medicaid budgets for a number of years. The demand for nursing home care is highly elastic, and a number of states, including West Virginia, have imposed moratoria on the development of nursing homes. The West Virginia moratorium has been in effect for more than a decade. The major exception to the moratorium has been to permit small hospitals to convert some of their unused acute care beds to Medicare-certified skilled care use. About 10% of the state's licensed nursing home beds (1,033 of 10,791 beds) are located in acute care community hospitals.

The moratorium appears to have had a substantial effect. Unlike inpatient hospital use and surgical demand, the state's nursing home use rate is lower than the national rate and that of all contiguous states (Table AR-1, entries 80-94). Nursing home locations, population density, the percentage of the population 65 years of age and older, and age-specific nursing home use rates by age group and by county of facility are shown on Maps AC-21, AC-22, and AC-25 through AC-27. They show comparatively low use levels, lower for example than roughly comparable Appalachian areas of western and southwestern Virginia, and high occupancy levels (94-95%). This is extraordinary, given the state's population profile, its geography and demography, and the evidence of unusually high levels of chronic and disabling conditions across the state. Although there are a number of personal care homes (a total of 3,095 licensed beds) and home health services around the state, there appear to be fewer alternatives to nursing home care than found in many nearby states. Nursing home use rates and levels probably are helping to control Medicaid program expenditures, but they do raise questions about access and equity for patients and providers of care alike that warrant careful examination.

B. Cost and Charges

The unusually high dependence on public health insurance programs is a mixed blessing for the state's health care providers and for the health care system in general. As noted earlier, a majority of the population (about 56%) is either insured by Medicare and/or Medicaid or is uninsured. Only a minority (40% to 45%) have private health insurance. Public payments are relatively stable and absolutely essential to the well-being of the state's health care system. Including public employees (PEIA), more than 70% of all hospital discharges are covered by government payment plans. Only about 30% of hospital revenues come from nongovernmental sources. Similarly, more than 77% of those who use primary care centers statewide are either insured by government programs or have no insurance. Less than 23% are insured privately. Community hospitals and the primary care centers are the two largest providers of charity care in the state. Their ability to do so is heavily dependent on not only the private monies they receive for services but also on the public monies that defray substantial overhead costs. The pattern is even more pronounced with nursing homes, where the vast majority are enrolled in the Medicaid or Medicare program. Data for free-standing ambulatory surgery centers are not available, but it is likely that the majority of patients are either privately insured or are Medicare enrollees.

Dependence on federal programs and monies is particularly strong. Medicare patients and revenues alone account for nearly half (48%) of all hospital volume and receipts and for nearly 40% of primary care center volume statewide. Because about three out of four Medicaid dollars are federal matching monies, a substantial majority (60% to 65%) of health system revenues in the state are directly or indirectly federal. Community hospital dependence on Medicare monies will increase somewhat as more are designated critical access hospitals, making them eligible for cost-based reimbursement.

High unavoidable dependence on public insurance programs, particularly the Medicare program, suggests that it would be prudent to develop strategies to maximize the ability of health care providers, services, and facilities statewide to qualify as Medicare providers (cost-based where possible) and to ensure that those who may qualify for eligibility enroll as early as possible.

C. Managed Care

As might be expected in a comparatively poor rural state, there is very little commercial managed care in West Virginia. As noted earlier, state health officials have made a concerted effort to encourage the development of plans and have established statewide case management (PAAS) and a capitated managed care plan (MHT) for some Medicaid recipients. A total of about 200,000 persons, about 12% of the population, are now enrolled in

one of the seven plans that serve the state. Managed care enrollment in the state will probably continue to grow, but very gradually. Given the problems being experienced elsewhere with managed care in more attractive markets, and the recent widespread disenrollment of Medicare recipients by a number of plans nationwide, it is difficult to see where or how growth is likely to accelerate any time soon.

It is noteworthy that many, if not all, of the positive market changes many associate with managed care, i.e., lower use rates, substitution of less expensive outpatient care for inpatient care where possible, reduction in capital spending for unnecessary facilities and equipment, are not necessarily dependent on high managed care penetration levels. Progress in reducing unnecessary inpatient use, the continued shift from outpatient surgery to inpatient surgery where possible, and the introduction of more efficient operations and practices are likely to continue apace, even if managed care levels do not rise. Market examples and economic forces generally will have effects, both positive and negative, regardless of how intensely or directly they are applied locally.

V. ACTION STEPS

Several steps that might be taken to ameliorate, if not resolve, some of the economic difficulties faced by the West Virginia health care system are outlined below.

- Assess the relative cost and charge structures of proprietary facilities and services compared with those of not-for-profit facilities and services. A significant number of West Virginia's hospitals and surgery facilities are proprietary. Proprietary facilities elsewhere tend to have higher charges and to serve a larger percentage of the privately insured population. In some cases, this decreases both patients and revenues to essential community services and facilities, driving up both aggregate and unit costs unnecessarily. Assessment findings should be used in policy formulation and in certificate of need and licensing decisions.

Given the heavy, and growing, dependence of community hospitals on outpatient surgery patients and revenue for long-term survival, the role and effects of proprietary free-standing surgery centers on local health care systems warrant study. Efforts should be made to ensure that the 'profits' made from ambulatory surgery are not lost to the system as a whole.

- Complete the small area analysis and managed care market profile studies discussed elsewhere (see At-Risk and Coordinated System statements). These studies would be modeled, respectively, along the lines of the profiles in the *Dartmouth Atlas of Health Care* and the Milliman and Robertson *Health Care Management Guidelines*. Map AC-23 shows the locations of West Virginia hospitals and suggested service areas boundaries for both initial studies.
- Review the history and results of Section 1115 Medicaid waivers in other states to determine whether this option is economically and politically viable in West Virginia. Given the unusually favorable federal/state match rate available, the high percentage of the population uninsured, the economic vulnerability of the small rural hospitals, local health departments, and primary care centers, and the early experience of the children's health insurance initiative, this approach appears to have promise, providing the necessary matching monies can be found or offset with funds from other sources.
- Ensure that any expansion of managed care incorporates a feature that strongly encourages managed care plans to include local health departments, primary care centers, and small community hospitals in their networks providing care. This feature is especially important given the current and potential migration of West Virginia residents to neighboring states for care.

VI. POTENTIAL SOLUTIONS

Given the extraordinary reliance on public payment programs, health care officials need to take steps to ensure the state and its citizens receive all the health and health-related federal support for which they can qualify. The importance of the assistance and the magnitude of the effort are such that the function may need to be given special status and priority by assigning it to a specific entity or office with the authority and capability of coordinating effectively all such efforts statewide and of integrating them effectively with efforts to obtain private grant and foundation monies.

Hospital, local health department, and primary care center budgets, costs, and operating returns ('profits' or budget balances) vary widely across the state. In the absence of full system integration, means and methods should be sought to provide incentives for those not-for-profit entities with relatively high operating returns and/or budgets to directly or indirectly support related entities that may be threatened.

VII. POLICY RECOMMENDATIONS

Consideration should be given to developing a regulatory framework that would encourage the expansion of managed care principles, where feasible, through the formation of provider-sponsored organizations and networks as specially designed, risk-bearing managed care plans, provided public interest operating requirements (e.g., community rating vs. experience rating) can be satisfied. The review of state health laws and regulations now under way as part of the Turning Point project (discussed in Public Health statement) may be helpful in this regard.

Consideration should be given to modifying the certificate of need program (discussed in the Access statement) to refine the current moratorium on nursing home development and incorporate a managed competition feature such as prospective population-based planning combined with a request for proposals/applications process.

Consider amending the certificate of need program to require that all features of the program, i.e., review and approval, and follow-up data reporting, apply to all licensed surgery centers.

Consider amending the certificate of need program to provide for an administrative review process that would expedite review and approval of projects and proposals that are consistent with the published state health plan or are in response to a request for proposal issued by the planning authority.

Make efficient and effective use of new tobacco settlement and tax revenues to support health and health-related projects, particularly those associated with cessation of tobacco use educational efforts and the maintenance of a system of care for those with tobacco-related diseases and conditions. Additional taxes on products that have substantial negative health effects, e.g., tobacco and alcohol, might be considered, both to discourage the use of those products and to obtain funds to support health services needed to treat the diseases generated by their use.

Given the very favorable federal/state match enjoyed by West Virginia, consideration should be given to expanding both CHIP and Medicaid generally through Section 1115 waivers.

Consideration should be given the formation of statewide high risk insurance pools and/or indigent health care trust funds that could be used to promote both access to care by the medically indigent and equity among hospitals providing charity care.

IX. ACCOUNTABILITY

Given the dire economic circumstances that many elements of the West Virginia health care system are in today, and the extraordinary dependence on public payment programs, it is logical to point to government to deal with the problem. Governments, both state and federal, have been helpful. The Public Health Transitions Project, the Rural Hospital Flexibility Program, and a number of other efforts to stabilize the health care infrastructure across the state are tangible manifestations of government concern and action.

These steps, of course, are not long-term solutions. Lasting solutions are more likely to be found through the development of an ongoing health policy formulation and planning process that, though initiated by public health officials, includes and relies fully upon those directly involved in the provision of care and the management of the health care system. Public officials should be responsible for organizing and initiating the process and for continued support and participation in it to ensure that the general public interest remains at the forefront. The value of the process itself, and of the outcome, will depend on the self-interest, good will, and capability of those involved, particularly those from the private sector who depend so heavily on public sector understanding and support.

X. ISSUES FOR THE FUTURE

A. Population-based Planning

Because of the nature and magnitude of health care problems in West Virginia, and the limited resources available to address them, it is clear that they can be dealt with meaningfully only by focusing on them systematically over a number of years. To do this requires the availability of accurate and reliable information that permits the problem(s) to be delineated clearly and assessed repeatedly over intervening years to determine whether the remedial steps taken are effective. Much data and information are already available, and the efforts under way to develop integrated health care delivery systems and integrated information systems, including WVHCA's CHRIS, will be helpful in this regard.

Though helpful, and inherently worthy of pursuit, the full potential of these efforts will not be achieved unless steps are taken to ensure that the data and information gathered, and the analysis and planning that follow, are population based. Short of violating privacy rights, all information needs to be linked to a specific population (or person, in the case of medical records abstracts). This includes managed care plans. To do effective analysis and planning, one needs to be able to determine, for example, whether those with diabetes or hypertension fare better under Medicaid managed care (e.g., MTH), in a case management fee-for-service arrangement (PAAS), or in the traditional fee-for-service arrangement. The current information system does not facilitate analysis at this level. Without analyses of this type, it will be very difficult to improve either outcomes or economic performance. Most information now available across the state is program, service, or facility based. Every effort needs to be made to make as much of the information gathering and planning processes population based as is possible.

B. Coordination of External Support

West Virginia's demography, geography, and socioeconomic status make it eligible for a bewildering array of federal and private programs and grants. The state appears to do relatively well in obtaining federal economic and other support. Its average match rate for federal funds is unusually favorable, it has received a substantial

number of foundation grants, and participates in a number of demonstration projects. Given that the state, or selected regions, counties, and communities, are likely to be technically eligible for far more programs and grants than they have the time and ability to pursue, it would appear advisable to establish a dedicated entity to coordinate this effort. This might involve, among other things:

- making the appropriate entities aware of the availability of outside support;
- supporting the application process as necessary and appropriate;
- monitoring and ensuring that health and health-related state entities fulfill their obligations and are held responsible for obtaining all federal monies to which they are entitled (e.g., that no monies are lost because of failure to apply or to meet program requirements or deadlines), and
- coordinating, to the extent practical and permissible, the grant-seeking efforts of public and private health sectors statewide.

Bibliography

Publications

Barnett E et al. *Heart Disease in Appalachia: An Atlas of County Economic Conditions, Mortality and Medical Care Resources*. Morgantown, WV: Prevention Research Center, West Virginia University, June 1998.

Health Care State Rankings 1999: Health Care in the 50 United States. Lawrence, KS: Morgan Quitno Press, 1999.

Health Care State Rankings 1995: Health Care in the 50 United States. Lawrence, KS: Morgan Quitno Press, 1999.

National Cancer Institute. *Sowing Seeds in the Mountains: Community-Based Coalitions for Cancer Prevention and Control*. Couto RA, Simpson NK, and Harris G, eds. NIH Publication No.94-3779, September 1994, p 51-52.

Vital Statistics of West Virginia 1997. Charleston, WV: West Virginia Bureau for Public Health, March 1999.

Wennberg J, M.D., ed. *The Dartmouth Atlas of Health Care in the United States: The South Atlantic States*. American Hospital Publishing, 1996.

West Virginia Rural Health Plan. Charleston, WV: West Virginia Office of Community and Rural Health Services, January 1998.

Data Sources

Annual Operating Data, West Virginia Hospitals and Nursing Homes, 1991-1997, West Virginia Health Care Authority, 1999.