REPORT OF THE
DEPARTMENT OF HEALTH ON

LONG TERM CARE OF INFECTIOUS TUBERCULOSIS PATIENTS

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 39

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COMMONWEALTH of VIRGINIA

Office of the Governor

George Allen
Governor

Kay Coles James
Secretary of Health and Human Resources

February 8, 1995

TO: The Honorable George Allen

and

The General Assembly of Virginia

The report contained herein is pursuant to House Joint Resolution 189, agreed to by the 1994 General Assembly.

This report constitutes the response of the Virginia Department of Health, in consultation with Virginia's teaching hospitals, to identify inpatient facilities for the care and treatment of patients with tuberculosis, especially the multidrug-resistant strain.

Respectfully Submitted,

Kay Coles James
Secretary of Health and Human Resources

HJR NO. 189: INPATIENT FACILITIES FOR LONG-TERM CARE OF TUBERCULOSIS PATIENTS

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EXECUTIVE SUMMARY

The 1994 General Assembly adopted HJR 189 to address the need for facilities to isolate: (1) persons with infectious TB who refuse to take medications as prescribed and thereby place their contacts at risk for the disease and themselves at risk for the development of drug resistant TB, and (2) persons with drug resistant-TB who despite taking medications need voluntary isolation to prevent them from transmitting their infection to household members and other close contacts.

HJR 189 requests the Virginia Department of Health (VDH), in consultation with Virginia's teaching hospitals, to study the location of inpatient facilities for long-term care of patients with TB. The facilities mentioned in the Resolution are state-funded teaching hospitals, private facilities, and Department of Mental Health, Mental Retardation and Substance Abuse Services facilities.

BASIC INFORMATION ABOUT TB

TB is not a highly communicable disease. Nationally, only about 30 percent of household contacts to an active case of pulmonary TB become infected. The percentage can increase with overcrowding in poorly ventilated environments. For this reason, TB is most common among persons living in crowded conditions. In Virginia, the reported cases of TB remained fairly steady from 1986 to 1991. Since 1991, reported cases have increased each year, the numbers for 1991, 1992 and 1993, being 379, 456 and 458 respectively. As of October 14, 1994, 264 cases of TB have been reported.

The percentage of TB cases reported in Virginia with resistance to at least one drug is also increasing. Drug resistant (DR)-TB could be prevented if patients complete treatment in accordance with their physicians' instructions. While the prevalence of drug resistant-TB in Virginia is still low (13 percent of TB cases tested for drug sensitivity in 1993), it represents a significant increase over that of previous years. The course of treatment increases from approximately 6 months for drug sensitive-TB to 18-24 months or longer for drug resistant-TB; the cure rate decreases from nearly

100 percent to 60 percent, respectively.

CURRENT EFFORTS TO CONTROL THE SPREAD OF TB

All suspected cases of TB seen in local health departments are promptly evaluated and treatment ordered if indicated. However, some persons fail to take their medications for various reasons.

The Centers for Disease Control and Prevention (CDC) has identified non-compliance with treatment recommendations as a significant contributing factor in the resurgence of TB and DR-TB nationally. To combat non-compliance in Virginia, VDH strongly encourages the use of directly observed therapy (DOT) - where a health care provider observes the patient ingesting medications. DOT is being implemented aggressively.

In addition, VDH has initiated a homeless incentive program to house homeless persons with TB in inexpensive motels in exchange for their willingness to comply with DOT. Such persons, especially those also infected with HIV, have displayed a need for access to housing and services for three primary reasons. First, they are at the greatest risk of continued homelessness, illness, and even death due to their dual diagnoses. They have the greatest likelihood of transmitting TB because they tend to congregate in crowded, poorly ventilated settings (shelters). Lastly, their transient lifestyle seriously decreases the likelihood of successful treatment even with DOT.

VDH has made it a priority to identify hospitalized homeless persons with TB who are at risk of treatment non-compliance and to provide for their living needs before they are discharged from the hospital.

Despite rigorous efforts to implement DOT and the success of the homeless incentive program, some persons adamantly refuse to take medications despite repeated counseling. They are

a potential risk to the public and may need to be isolated. The 1993 General Assembly amended and enacted legislation for the isolation of such persons.

THE PROBLEM CONCERNING ISOLATION OF PATIENTS

Currently, the only properly equipped facility available for the isolation of non-compliant patients is the Greensville Correctional Center. However, judges are very reluctant to isolate patients in such a restrictive environment. Also, voluntary isolation because of homelessness or drug-resistant TB in compliant patients should not occur in a prison. Therefore, it is necessary to identify other suitable facilities. The number of persons requiring long-term inpatient care is expected to increase in the years ahead. Since 1987, 93 (3 percent) of 3,065 diagnosed TB cases have been lost to follow-up in Virginia. Selective use of the current legal isolation statute (§ 32.1-48.04) could reduce this percentage significantly in the future.

Voluntary isolation of DR-TB patients and homeless patients while infectious would serve to prevent new infections among persons with whom they have contact. Since 1990, 136 cases of drug resistant-TB have been identified in Virginia. Twenty-six were resistant to the two best anti-TB drugs - isoniazid and rifampin. This represents 1.5 percent of all reported cases over this time period. Patients with this resistance pattern remain infectious for weeks to months, and there is currently no proven treatment to protect infected contacts against future disease. Every effort must be made to ensure that these patients will not transmit their infection to uninfected persons. Based on these data, 4 to 5 percent of Virginia's TB cases could be candidates for long-term care. This translates to approximately 20 patients each year, for an average stay of 4 to 6 months. It is estimated that no more than 5 of these patients would be housed concurrently.

Facilities providing long term care for TB patients must be in compliance with the Occupational Safety and Health Administration's (OSHA) policy designed to reduce occupational exposure to TB, published October 8, 1993.

These facilities would ideally be capable of ensuring medical expertise in the management of TB patients, psychiatric consultation, substance abuse counseling, effective discharge planning, and secured rooms for patients under an order of legal isolation.

IDENTIFICATION OF AVAILABLE FACILITIES

A committee represented by (among others) the state's three teaching hospitals, the Virginia Hospital Association, and the Virginia Chapter of the American Lung Association, met on July 29 to discuss the response to HJR 189. The task of the committee was to review the needs for long-term care of TB patients, identify facilities and estimate funding needs. The committee considered the advantages, disadvantages and costs associated with isolating patients at state assisted teaching hospitals, private hospitals, Veterans Administration hospitals, and facilities operated by the Department of Mental Health, Mental Retardation, and Substance Abuse Services.

RECOMMENDATION

After careful consideration of the relative merits and costs associated with establishing isolation rooms in the aforementioned facilities, the consensus was that the most effective and least expensive facilities , in order of preference, are the Central Virginia Training Center in Lynchburg, and the Veteran's Administration (VA) hospitals in Richmond, Hampton and Salem.

The training center has properly equipped and unused rooms that can be utilized without disrupting on-going activities within the facility. This facility would not require expensive room renovations to meet OSHA requirements. In addition, the average cost per patient decreases with multiple admissions in the training center. In all other options investigated, the cost per patient is constant. The VA hospitals have physicians who can manage TB patients, but do not have properly equipped rooms. It is unknown if the VA hospitals would be able or willing to house as many

patients at one time as the training center. Lastly, and perhaps most importantly, the VA hospitals cannot currently provide this service. Therefore, the committee believes that the Central Virginia Training Center is the optimal facility, with the VA hospitals a close second.

HJR NO. 189: INPATIENT FACILITIES FOR LONG-TERM CARE OF TUBERCULOSIS PATIENTS

PURPOSE OF RESOLUTION

House Joint Resolution (HJR) No. 189 adopted by the 1994 General Assembly requests the Virginia Department of Health (VDH), in consultation with Virginia's teaching hospitals, to study the location of inpatient facilities for long-term care of patients with tuberculosis (TB). HJR 189 specifies that VDH examine the potential for establishing long term care centers at state supported teaching hospitals, facilities assigned to the Department of Mental Health, Mental Retardation and Substance Abuse Services, and consideration of contractual agreements with public or private hospitals.

PATRONS

The patrons of HJR 189 are Delegates James M. Scott, James F. Almand, Vincent F. Callahan, Jr., L. Karen Darner, Robert D. Hull, Alan E. Mayer, Kenneth R. Melvin and Marian Van Landingham and Senators Robert L. Calhoun, Edward M. Holland and Janet D. Howell. Delegates Scott, Callahan, Darner, Hull, Mayer and Van Landingham were also patrons of House Joint Resolution 531 adopted during the 1993 Session that pertained to TB related issues.

BACKGROUND

HJR 531 called for the study of effective methods to arrest the spread of active TB and prevent the development of drug resistant TB. One of the recommendations of the HJR 531 study report was to establish appropriate facilities for legally isolating non-compliant persons with infectious TB and treating individuals with drug resistant-TB. Such persons are often not acutely ill, but have the potential to transmit the infection to others. The report recommended that specific options be considered. These options were: the establishment of "TB Centers of Excellence" at state assisted teaching hospitals; the utilization of state owned buildings such as unused facilities of the Department of Mental Health, Mental Retardation and Substance Abuse Services (DMHMRSAS); the

establishment of agreements with state programs (such as currently operating facilities of the DMHMRSAS); and contracting with private hospitals with the capability to house infectious TB patients for prolonged periods.

BASIC INFORMATION ABOUT TB

TB is not a highly communicable disease. Nationally, only 30 percent of household contacts to a person with active pulmonary TB become infected. The percentage can increase with overcrowding in poorly ventilated environments. For this reason, TB is most common among persons living in crowded conditions. In Virginia, the reported cases of TB remained fairly consistent from 1986 to 1991. Since 1991, the number of documented cases of TB has increased each year, with 379, 456 and 458 cases being reported for 1991, 1992 and 1993, respectively. As of October 14, 1994, 264 cases of TB have been reported.

Of great concern is the increasing percentage of TB cases reported in Virginia with resistance to commonly utilized anti-TB drugs. Development of drug resistant TB can be prevented if patients complete treatment in accordance with their physicians' instructions. The Centers for Disease Control and Prevention (CDC) has identified non-compliance with treatment recommendations as a significant contributing factor in the resurgence of TB and development of drug resistant (DR) TB. To combat non-compliance in Virginia, VDH strongly encourages the use of directly observed therapy (DOT) where a health care provider observes the patient ingesting medications. While the prevalence of DR-TB in Virginia is still low (46 or 13 percent of all cases tested for drug sensitivity in 1993), this was the highest number of drug resistant cases ever reported in a single year. In addition, more cases were identified as resistant to multiple drugs (MDR-TB) than to a single drug. Twelve (48 percent) of the 25 MDR-TB cases were resistant to both isoniazid and rifampin, the two best anti-TB drugs. Before 1993, more than 4 cases with this resistance pattern had never been reported in Virginia in a single year. The course of treatment increases from approximately 6 months for patients whose TB is susceptible to all drugs to 18-24 months or longer for MDR-TB; the cure rate decreases from

nearly 100 percent to 60 percent, respectively. The cost for the medications to treat drug susceptible disease averages $50 per month, compared to a minimum of $600 per month for MDR-TB.

CURRENT STRATEGIES TO PROMOTE COMPLIANCE WITH TREATMENT RECOMMENDATIONS

VDH employs several strategies to promote compliance with prescribed therapy in individuals with suspected or confirmed TB. These include clinical and diagnostic services provided at no charge or based upon an individual's ability to pay, directly observed therapy, the utilization of TB outreach workers and the Homeless Incentive Program. Each of these strategies are outlined in more detail below.

TB clinics are currently held at 20 sites throughout Virginia and, where possible, held at night for the convenience of employed patients. VDH's Division of TB Control has established approximately 60 contracts statewide for chest x-ray services available outside of regular business hours at no cost to the patient. The Division of Consolidated Laboratory Services (DCLS) provides thorough and dependable services for the laboratory confirmation of TB and drug susceptibility testing to patients free of charge. Blood tests to monitor for adverse reactions to anti-TB medications are also free to patients in most districts through a VDH contract with Roche Laboratories. Whenever there is a charge, it is based on a sliding scale and no person suspected or confirmed to have TB is denied services due to an inability or unwillingness to pay.

Directly observed therapy (DOT) has been documented to increase the likelihood of patient compliance by reinforcing the importance of taking medications as prescribed. At the very least, it allows the health care provider to accurately assess the patient's level of compliance.

VDH is currently in the process of hiring 24 full-time and two part-time outreach workers for the 17 health districts with the highest TB morbidity. These employees are linguistically compatible

with the populations they serve, enabling them to enhance rapport, build trust and increase the likelihood of compliance with therapy. They participate in DOT, provide transportation to scheduled clinical sessions and perform many needed services in the field.

The Homeless Incentive Program (HIP) was implemented by VDH in April 1992. This program provides housing in inexpensive motels and facilitates access to social services in exchange for the homeless patient's compliance with DOT. Before the initiation of this program, homelessness often presented many barriers to successful treatment, and even with DOT, outreach workers, and convenient low cost services, many patients were lost to follow-up. This program provides participants a stable residence which is sufficient motivation in most cases to comply with DOT. In its first two years, HIP has housed 39 individuals. One participant was lost to medical supervision, and one was dropped from the program for non-compliance with DOT. Of those who remained, 16 have completed TB treatment and 9 are currently receiving DOT. HIP was 92.3 percent successful in accomplishing its goal of overcoming the barriers confronted by homeless TB patients. The cost of housing varies by locality; the average cost during the first two years was $27.65 per day.

HIP is the only long-term care program currently available to TB patients in Virginia and access is limited to patients who are homeless. It was created in response to an increasing number of homeless TB patients requiring legal isolation to facilitate compliance with prescribed therapy and reduce the risk to the public health. While the Code of Virginia allows the option of serving legal isolation at home, these patients had no home and were therefore isolated in the Greensville Correctional Center's Infirmary. In its first two years, HIP has fostered compliance with prescribed therapy, thus significantly reducing the need for legal isolations. Care provided by outreach workers in these facilities include the delivery of DOT and the provision of transportation to scheduled clinic visits. No patient is allowed to participate until non-infectious.

PROTECTING THE PUBLIC FROM INFECTIOUS TB BY ISOLATING PATIENTS

In spite of these activities, occasions arise that compel VDH to intervene to protect uninfected persons from exposure to infectious TB disease. These interventions are necessary in the case of an inability or unwillingness on the part of the TB patient to comply with prescribed treatment or voluntary isolation. Patients with multi-drug resistant disease living in households with uninfected persons also cause concern. Such circumstances call for isolation in a properly equipped facility capable of long term care.

(A) Legal Isolation Due to Non-Compliance

While the strategies just described have been successful in most instances, there is an occasional need to deal with persons who refuse to take prescribed medications despite repeated counseling that such refusal could result in the transmission of the disease to others. Such persons must be isolated, to protect the public from the risk of infection.

In 1992, VDH documented two instances in which a non-compliant, infectious TB patient was lost to medical supervision because public health officials were unable to react quickly to a potentially serious situation due to constraints in the legal isolation statute. One of these patients has never resurfaced to continue treatment and is presumed to have exposed many others in the interim. The other boarded a plane full of unsuspecting travelers and returned to his native country in South America. As a result, the 1993 General Assembly amended Section 2.1-48.02 of the Code to allow the State Health Commissioner to issue a temporary detention order for isolation of a person who has refused or failed to report to the local health department for appropriate outpatient treatment and education concerning his disease after being ordered to do so, has a documented history of failure to adhere to a prescribed course of treatment or has indicated that he will not comply with prescribed treatment. The detention order is valid for only 48 hours but may be extended to 96 hours when the 48 hour period ends on a weekend or holiday. To continue isolation, an order under Section

32.1-48.04 must be issued by a District Court judge. The individual considered for isolation must be proven to have communicable TB, be engaging in at-risk behavior, have demonstrated an intentional disregard for the health of the public by knowingly engaging in behavior which has placed others at risk for infection and have demonstrated an inability or unwillingness to comply with prescribed treatment such that no alternative to legal isolation exists.

In June 1994, the Commissioner utilized the authority provided in Section 32.1-48.02 for the first time. The patient was a 35 year old male originally diagnosed and counseled in Baltimore in April 1994. He was lost to medical supervision there and resurfaced at MCV in early June. He threatened to leave the hospital against medical advise (AMA) while still infectious but did not follow through. He was only intermittently compliant with prescribed therapy. While in MCV, it was learned the patient was homeless, an admitted alcohol abuser and was diagnosed with a borderline personality disorder. This is typical of those patients for whom VDH has been compelled to seek legal isolation. Upon being rendered non-infectious, the patient was discharged to the homeless incentive program (HIP). He did not comply with DOT, despite counseling, and was readmitted voluntarily to MCV three days later. He was non-compliant with both therapy and hospital infection control policies requiring him to be masked when outside his hospital room. He continually threatened to leave AMA. When he made good on this threat, a Commissioner's Order was issued. The Richmond Police were ordered to deliver the patient back to MCV which they did the same day the order was issued. The Richmond Sheriff's Office stood guard at his door for two days until the District Court could hear VDH's case for legal isolation. The court sentenced the patient to 75 days in the Greensville Correctional Center (GCC) infirmary.

Persons with communicable TB who show an intentional disregard for the health of the public are in violation of Section 32.1-48.04 of the Code. For such persons, isolation in a prison is a result of behaviors demonstrating that a secured environment is required to protect others from the spread of the disease. The use of the GCC infirmary is absolutely essential in some cases and ideal for confining persons who are a threat to the public. It has been used to isolate three patients over the last four years for varying periods of time. However, it has never been successful as a deterrent to

non-compliant behavior. All of the patients isolated there have regularly refused treatment in protest. The major goal of isolation is to protect others, but providing treatment for the isolated patient is also important. In this regard, the GCC infirmary has failed. For this reason, an intermediate alternative between the lack of structure in HIP and the highly structured environment of the GCC infirmary is needed; an alternative that will not only protect the public, but also foster patient compliance. Even with this alternative, there will occasionally be a need for the GCC infirmary.

GCC Infirmary

Advantages

The advantages to the utilization of the GCC infirmary include: (1) Due to its use as the Department of Corrections' (DOC) TB isolation facility, the staff have developed expertise in the management of TB patients. (2) A Division of TB Control physician conducts monthly clinics at this facility. (3) Psychiatric consultation is available. (4) This facility can provide a secured environment for patients under legal isolation, thus protecting the public from exposure. (5) The facility attempts to help patients cope with psycho-social issues associated with long term care. (6) Patients under an order of legal isolation are not subject to the same rules as inmates, nor are they exposed to inmates. (7) The per diem cost for long term care at this facility is the least of all options explored in the study.

Disadvantages

The disadvantages of this facility include: (1) A prison environment has not proven conducive to promoting patient compliance with prescribed therapy. (2) There is no social service assistance or discharge planning. (3) Alcohol and drug counseling services are unavailable for patients with infectious TB. (4) The number of properly equipped AFB isolation rooms are limited and must first be utilized for TB suspects in the DOC. Generally, the availability of only one such room can be

assured. (5) The facility is located within the grounds of a correctional institution and is not viewed favorably by the judiciary as a site for legal isolation.

(B) Isolation for Reasons Other Than Non-Compliance

Some persons need to be isolated not because of refusal to take medications but because they suffer from multidrug-resistant TB and must be isolated to prevent them from transmitting this difficult-to-treat form of TB to their household contacts or they are homeless and remain infectious so they are not yet eligible for admission into HIP.

As an example of such a situation, in March 1994 a 20 year old respiratory therapy student at a community college in eastern Virginia was identified as having TB disease resistant to isoniazid, rifampin, ethambutol and streptomycin (4 of the 5 most effective drugs utilized to treat the disease). She was immediately requested to voluntarily isolate herself from contact with as many people as possible, and she complied. Skin testing of her classmates revealed that 7 (25%) of 28 were infected. All 7 of these contacts were uninfected at the start of their training. It was evident from this investigation of what would typically be considered low risk contacts that the patient's TB was highly infectious. An examination of her close contacts revealed that her brother (21), who was uninfected when screened at Virginia Tech three months earlier, was now infected. Her parents (55 and 53) were both infected earlier in their lives. This was not surprising since they had immigrated to the United States from the Philippines. Her sister (17), her grandmother (86) and her boyfriend (21) all remain uninfected. Despite her willingness to comply with prescribed therapy and voluntary isolation, the patient remains infectious and these three uninfected contacts are exposed daily. VDH has installed ultraviolet lights (which inactivate TB bacteria) in the home to protect these individuals. However, VDH could provide these contacts greater protection if it was possible to offer the patient placement in a controlled environment outside the home.

MDR-TB cases resistant to both isoniazid and rifampin cause great concern because they are

the only drugs effective in protecting infected contacts from developing TB in the future. If persons who have close contact with a patient resistant to both these drugs should become infected, there is no effective therapy to prevent these persons from developing MDR-TB at a later time. They carry the potential for developing MDR-TB disease for a lifetime. MDR-TB must be treated in an environment which limits the patient's potential for transmitting the infection to others, especially the members of their household. MDR-TB patients can remain infectious long after they are not acutely ill enough to require hospitalization. With no properly equipped long-term care facilities to house them after hospitalization, these patients are often released to their households where uninfected family members and friends are exposed to their disease. In a long-term care facility, visitors would be advised to take precautions to minimize their risk of infection.

The homeless incentive program (HIP) can accommodate the needs of most homeless patients if hospitals agree to delay discharge of patients until non-infectiousness can be documented; most hospitals do agree. Infrequently, patients are discharged simply because they no longer require acute care, without regard for the public health issues involved in discharging infectious patients. HIP's protocol does not allow the housing of homeless patients while infectious so as to protect the public. Therefore, when hospital discharge precedes non-infectiousness and immediate placement in HIP is not possible, the public is placed at risk. Therefore a need exists for facilities to house patients who are willing to do what is necessary to prevent transmission of their infection to others but cannot due to circumstances beyond their control.

Neither the judiciary nor public health officials wish to isolate TB patients in a prison when required for reasons other than willful non-compliance. Unfortunately, there are no suitable facilities at present for isolating these patients. The preferrable course of action would be to isolate them in a facility that is less restrictive than a prison not only because they have not violated any laws but because these facilities will foster voluntary compliance with isolation. Isolation has not been a viable alternative in the past due to the lack of appropriate facilities for such patients. Infrequently, this has led to the loss of the patient to medical supervision, a result that is not only detrimental to the public health but the health of the patient as well.

While a secured facility such as the GCC Infirmary will always be necessary to protect the public against a few non-compliant TB patients at risk for flight, secure detention in a prison is not necessary in all cases. It is the consensus of public health officials that in most cases isolation should first be attempted in the least restrictive environment appropriate for the patient. Use of the GCC Infirmary would be utilized as an option of last resort should less restrictive alternatives prove insufficient to protect the public health.

VDH Contract with University of Virginia (UVa) Medical Center

VDH has a long standing contract with the UVa Medical Center for the care of acutely ill TB patients. Under the contract, VDH pays the UVa Medical Center $80,000 a year for guaranteed availability of two acute care beds as needed. Under the terms of this contract, admission of a patient is a joint decision made by the Director of VDH's Division of TB Control and a physician from the Division of Pulmonary and Critical Care Medicine at UVa. While patients who qualify for admission to the Center may or may not be infectious to their contacts, it is the severity of their illness that determines whether they will be admitted. Since most patients who endanger the public by their refusal to take medications are not acutely ill, they will not qualify for admission under the terms of this contract. A clear distinction must be made between the need for hospitalizing acutely ill TB patients primarily for their own benefit and the need for isolating patients who are not acutely ill to prevent them from transmitting the disease to uninfected persons.

The following case demonstrates the type of patient admitted under VDH's contract with UVa. In February 1993, a 24 year old female immigrant from Pakistan entered the United States. Her TB disease had been treated over a 3 year period in her native country. Due to non-compliance with prescribed therapy her disease was resistant to isoniazid, rifampin, ethambutol and streptomycin (4 out of 5 of the best anti-TB drugs). Treatment of her drug resistant disease was initiated promptly upon arrival. Despite taking her medications under the direct observation of a public health nurse over a period of 4 months, her health declined to the degree of incapacitation, rather than slowly

improving as is typical for patients with drug resistant TB. Her left lung was almost completely destroyed by the disease and the medication she was being treated with was effecting no improvement. Admission to UVa was arranged in June 1993. The patient's health was so poor that surgery to remove her left lung could not be safely performed until September. She was discharged on anti-TB medications in October 1993.

This patient's infectiousness was not an issue. Because of her poor health, she was homebound. She lived with her husband who was already infected. This patient's need was for acute care hospitalization. Without the UVa contract, the cost to VDH for this patient's 125 day hospitalization would have been $85,625, not including the cost of surgery.

An average of three patients per year are hospitalized under this contract. Their average stay is 4 to 6 months. Often both beds are occupied concurrently. Most patients do not require surgery, but at the time they are admitted, none can be managed in less than an acute care setting.

REQUIREMENTS OF FACILITIES PROVIDING LONG-TERM CARE

Since all patients admitted to the various facilities considered in this study would be infectious, each facility must comply with the Occupational Safety and Health Administration's (OSHA) policy for preventing occupational exposure to TB. The policy requires at a minimum that the facility has private rooms equipped with appropriate air handling to meet certain standards for containing the spread of TB bacteria, commonly referred to as acid fast bacilli (AFB) isolation. These include the use of negative pressure to direct air flow into, not out of the patient's room, a minimum of six air changes per hour in the room and venting of room air directly to the outside unless appropriately filtered before recirculation. Secondly, the facility must have a program which provides employee's treating these patients with the OSHA required type of particulate respirator. The respirator must fit properly and employees must be given instructions on its use. Lastly, the facility must have in place a periodic TB screening program for employees to detect new infections.

In addition to meeting these OSHA requirements, the ability to provide the following services is preferred: medical expertise in the management of TB disease, psychiatric consultation, effective discharge planning, alcohol and drug abuse counseling and secured facilities to confine TB patients under a legal order of isolation.

LEVEL OF NEED

An estimate of the demand for these beds can be made by examining the data over a number of years. The number of patients lost to follow-up will provide an estimate of the utilization of beds for court ordered isolation. Additional utilization can be estimated by determining the number of MDR-TB patients resistant to both isoniazid and rifampin. The estimates reached by this analysis will necessarily be inflated. Not all patients lost to follow-up are non-compliant previous to their disappearance and not all patients resistant to both isoniazid and rifampin will agree to voluntary isolation.

Since 1987, 93 (3 percent) of 3,065 diagnosed TB cases have been lost to medical follow-up in Virginia. With the exception of a peak in the number of patients lost to follow-up in 1992, the percentage of these cases to overall cases has remained consistent. Since 1990, VDH has identified 136 cases of drug resistant TB, with 26 resistant to both isoniazid and rifampin. This represents 1.5 percent of all reported cases over this time period. Based on these data, it is estimated that 4 to 5 percent of Virginia's TB cases could use a long-term care facility or approximately 20 patients per year, though not all 20 would require services concurrently. The average estimated stay is 4 to 6 months. The stay for homeless TB patients bound for HIP will rarely exceed 3 weeks.

COMMITTEE DELIBERATIONS ON LONG-TERM CARE OPTIONS FOR TB PATIENTS

A committee of representatives from various public and private provider communities was convened to review the current capacity for long term care of TB patients, including the requirements, location and cost of appropriate facilities. Members of the committee were:

- Gordon Archer, MD, Chairman, Division of Infectious Diseases, Medical College of Virginia
- Mary Bednar, Associate Executive Director, University of Virginia Medical Center Administration
- Opal Bristow, RN, Chief Nurse, Department of Corrections
- David Brown, Director of Policy, Virginia Hospital Association
- Carl Fischer, Executive Director, Medical College of Virginia
- Katherine Hamm, Executive Director, American Lung Association of Virginia
- Rubin McBrayer, MD, Associate Professor of Medicine, Director of Pulmonary Services in Critical Care, Medical College of Hampton Roads
- Virginia Wells, MD, Hospital Epidemiologist, Medical College of Virginia
- Grayson B. Miller, Jr., MD, Director, Office of Epidemiology, VDH
- A. Martin Cader, MD, Director, Division of Communicable Disease Control, VDH
- Tom Privett, Administrator, Division of Tuberculosis Control, VDH
- Vicki O'Dell, Information Specialist, Bureau of Toxic Substances, VDH
- Jack W. Barber, MD, Acting Director, Office of Medical Affairs, Department of Mental Health, Mental Retardation and Substance Abuse Services

It should be stated that the cost estimates included in this study were provided by the facilities themselves with the exception of private hospitals whose costs were provided by the Virginia Hospital Association. None of these estimates were independently verified by VDH.

The Committee discussed the advantages and disadvantages of options available to the state. The findings were as follows:

State Assisted Teaching Hospitals

The facilities included in this option are the Medical College of Virginia (MCV), the University of Virginia Medical Center (UVa) and the Medical College of Hampton Roads. These facilities are designed to provide services for patients requiring acute care. Therefore, the cost of providing long term care in these facilities is higher. The range of costs associated with these facilities was broad. Both MCV and UVa included the costs of room adaptations to meet OSHA standards in their estimates.

Cost Analysis

Hospital Costs:	$419 - $1,023 per occupied day
Physician Costs:	$90 - $150 per occupied day
Total cost per patient (4 month stay)	$61,080 - $139,200

The cost of room renovations ranged from $17,000 - $46,000 per room depending upon the facility.

Advantages

The advantages of utilizing state assisted teaching hospitals for long term care of infectious TB patients include: (1) These facilities have a high level of expertise in the medical management of TB. (2) Psychiatric consultation is available. (3) They have personnel well versed in the social service network and are experienced in effective discharge planning. (4) The per diem cost is less expensive than at a private acute care facility. (5) Their multiple locations should enable family and friends to visit with relative ease. (6) These patients would offer opportunities for medical students, interns and residents to gain experience in the management of TB patients.

Disadvantages

The disadvantages of utilizing these facilities include: (1) There are not enough rooms equipped for AFB isolation as required by OSHA to fully meet the expected demand for beds. (2) These institutions have no funds for completing the environmental adaptations necessary to comply with OSHA policies for housing infectious TB patients. (3) They have no in-house alcohol and drug abuse counseling services. (4) As acute care institutions, the per diem cost is far in excess of that in a long term care setting. (5) These institutions are not equipped to deal with the psycho-social issues patients must confront in long term care. (6) They are not equipped or staffed to house patients as would be necessary with legal isolation requiring a secured environment.

Private Hospitals

The committee examined the possibility of contracting with private hospitals with properly equipped facilities to provide long term care for TB patients. These facilities, like the state assisted teaching hospitals are designed for acute care so the cost of providing long term care in this setting would likely be high.

Cost Analysis

Hospital Costs:	$1,110 per occupied day
Physician Costs:	$150 per occupied day
Total cost per patient (4 month stay):	($1,110 + $150) x 120 = $151,200

Advantages

The advantages associated with private hospitals include: (1) They have personnel well versed in the social service system and do effective discharge planning. (2) Their distribution throughout the Commonwealth allows more versatility for patients to be close to family and friends. (3) No funds would be needed for environmental adaptations to meet OSHA policy for housing patients with TB disease because the state would not consider contracting with facilities that lack these adaptations. (4) Opportunities for staff to gain expertise in the management of TB patients would increase.

Disadvantages

The disadvantages include: (1) There is a shortage in the number of available rooms equipped for AFB isolation. (2) These facilities cannot typically provide psychiatric consultation in conjunction with medical expertise in managing TB (only private psychiatric hospitals have the ability). (3) While the private psychiatric facilities have in-house alcohol and/or drug abuse counseling, they cannot provide expertise in medical management. (4) The per diem cost is even higher than in state assisted teaching hospitals. (5) Unlike teaching hospitals, they do not typically have physicians on staff well versed in the management of TB; most often this expertise would be provided by physician consult, representing additional costs over the estimated per diem room rate. (6) These facilities are not equipped to deal with the psycho-social issues patients must confront in long term care. (7) They are not equipped or staffed to house patients as would be necessary with legal isolation requiring a secured environment.

Veterans Administration Hospitals

The committee suggested the possibility of contracting with the VA hospitals in Richmond, Hampton and Salem for long term care. It was suggested that because these facilities have attached

nursing homes, long term care could be provided at a reduced rate compared to those facilities traditionally offering exclusively acute care.

Cost Analysis

Contractual Costs:	$200 (range $150 - $250) per occupied day
Total cost per patient (4 month stay):	$200 x 120 = $24,000

The cost of room renovations necessary to create AFB isolation in the VA's long term care facilities is estimated to cost $4,000 per room. This is a one time cost.

Advantages

The advantages of contracting for the use of VA facilities include: (1) Personnel in these facilities are experienced in the medical management of TB and can handle other medical emergencies that may arise. (2) Psychiatric consultation is available. (3) They are familiar with the social service network and are experienced in effective discharge planning. (4) There are long term care facilities on the premises, resulting in all the advantages of an acute care hospital with the cost savings of a long term care facility. (5) All costs associated with the provision of services will be incorporated into the contract price. (6) They are located at multiple sites throughout the Commonwealth. Patients housed in these facilities may be closer to family and friends. (7) There are alcohol and drug abuse counseling services in-house. (8) They are associated with the state assisted teaching hospitals and their use would benefit interns, residents and medical students. (9) These facilities are accustomed to dealing with the psycho-social issues patients must confront in long term care.

Disadvantages

The disadvantages include: (1) AFB isolation rooms are not available and there will be a cost for these environmental adaptations. This cost is far below that estimated by state assisted teaching hospitals. (2) These facilities are not equipped or staffed to house patients as would be necessary with legal isolation requiring a secure environment. (3) They are not able to provide these services presently because they are intended for veterans only. They expect to be able to do so in the future.

DMHMRSAS Facilities

Western and Eastern State Hospitals

The facilities at both Western and Eastern State would be intermittently available for voluntary admissions only. Placement of patients under legal isolation in these facilities is not considered advisable because they are not staffed to handle "disruptive" patients. In either of these two settings, DMHMRSAS nursing and support staff would be utilized to manage the patients. The cost for such use would be on a per diem basis. Contracting with local physicians to manage patients will most likely be necessary. Since these AFB isolation rooms are not physically separated from the hospital's patient population, exposure of other patients to TB is likely.

Cost Analysis

Hospital Costs:	$300 per day
Contract Physician:	$3,200 (2 hours/week x $100 per hour)
Total cost per patient (4 month stay):	($300 x 120) + $3,200 = $39,200

Advantages

The advantages of these facilities include: (1) Psychiatric consultation is available. (2) These facilities have personnel well versed in the social service network and are experienced in effective discharge planning. (3) While the number of properly equipped AFB isolation rooms is limited and must first be utilized to care for DMHMRSAS clients, the availability of some of these rooms could generally be assured. (4) The per diem cost is less expensive than at either a state assisted teaching or private hospital.

Disadvantages

The disadvantages include: (1) The high risk of transmitting infection to psychiatric patients in the hospital. (2) These facilities lack the medical expertise to manage TB, therefore, medical consult fees would be an added expense. (3) They are not available as an alternative to the GCC infirmary for patients under a legal order of isolation. (4) The idea of long term care in these facilities may cause infectious MDR-TB patients to reject voluntary admission. (5) These facilities do not have in-house drug and alcohol counseling services for infectious TB patients. (6) The number of rooms equipped for AFB isolation are few, not designed for long term care and not presently secured.

Central Virginia Training Center (CVTC)

This institution presents the optimal alternative to the GCC Infirmary for housing patients needing isolation. The fourth floor of the Copes Building on this campus is relatively unused at present. A suite of five AFB isolation rooms could easily be utilized to serve as a miniature TB sanitorium at low cost. Unlike the other two DMHMRSAS facilities mentioned, the exposure of training center residents to TB patients could easily be prevented. Contracting with private industry for custodial care would defray costs if none of the rooms are occupied. A contract with a local

physician could provide medical management as necessary. Food, cleaning and maintenance services could be provided by training center staff. The funding needs are:

Cost Analysis

Food:	$20 per day x 120 = $2,400
Cleaning & maintenance (4 months):	$100 per day x 120 = $12,000
Physician coverage (4 months):	$3,200 (2 hrs/wk x $100/hr)
Nursing coverage (4 months):	$3,000 (1 hr/day x $25/hr)
Custodial care (4 months)	$25,920 (24 hrs/day x $9/hr)
Total cost for 1 patient (4 month stay):	$46,520

The average cost per patient (4 month stay) would be reduced with each additional admission as follows:

2 patients:	$24,460 per patient
3 patients:	$17,107 per patient
4 patients:	$13,430 per patient
5 patients:	$11,224 per patient

Total cost for running this facility if occupied by 3 patients year round: $153,960

Advantages:

There are distinct advantages to utilizing CVTC for long term care of infectious TB patients, these include: (1) As the number of patients isolated increases, the cost per patient decreases. In every other option, the cost per patient is constant. (2) This facility has sufficient rooms for the anticipated need. (3) All staffing will be by contract so no costs would be incurred when rooms are

unoccupied. (4) The facility could be adapted to house patients under legal isolation requiring a secure environment.

Disadvantages:

The only disadvantage is that CVTC would be the only site available for long term care. therefore, it could be inconvenient for voluntary admissions living far away from Lynchburg.

CONCLUSION

This study examined the current options for long term care of patients with infectious TB and evaluated their strengths and limitations. It identified three circumstances under which long term care would be utilized. They are patients under a legal order of isolation, patients with TB disease resistant to both isoniazid and rifampin while infectious and homeless TB patients while infectious and ineligible for the Homeless Incentive Program. The facilities considered were state assisted teaching hospitals, private hospitals, Veteran's Administration facilities and DMHMRSAS facilities.

None of the options can provide all the ideal services. There are, however, clear advantages to particular options, from the standpoint of available services, location and cost. The Central Virginia Training Center in Lynchburg and the VA Medical Centers in Richmond, Hampton and Salem would provide the most comprehensive services in a comfortable setting for TB patients in need of long term care. The two disadvantages noted with VA Medical Centers, the shortage of AFB isolation rooms and lack of security for patients under a legal isolation order, were common to most options considered. The cost represents a savings over housing these patients in an acute care facility such as a state assisted or private hospital. The VA facilities may be attractive to the patients requiring voluntary admission, such as patients with MDR-TB and homeless patients who are infectious. VA facilities, however, are not the best option for patients under legal isolation, because

of the lack of security.

Although the need arises infrequently, patients under legal isolation are a group requiring special consideration. Most are homeless and accustomed to a transitory lifestyle. Most have mental health and/or substance abuse problems. Isolation in a secure setting is essential to prevent them from disregarding the legal order. The Greensville Correctional Center Infirmary is currently utilized for this purpose. None of the facilities considered, outside the Department of Corrections, currently provide such a setting.

The AFB isolation suite at the Central Virginia Training Center in Lynchburg (a DMHMRSAS facility), could easily be equipped and staffed to fulfill this need. This suite of five rooms could serve as a miniature TB sanitorium. The occupancy rate would most likely be low, given past experience. These rooms could meet the demand for such a facility for years to come, barring an unforeseen increase in these types of patients or insufficient funding for the Homeless Incentive Program (HIP). This suite of rooms is rarely, if ever, utilized by DMHMRSAS. It is located at the end of a hallway on a floor with little activity. Therefore, exposure to the mentally retarded residents of the training center could be easily prevented. Custodial care staffing for such a facility would be by contract with private industry and utilized when needed. Likewise, a local pulmonary specialist or infectious disease physician could be on contract to provide the necessary medical management. VDH would solicit the help of the American Lung Association of Virginia, its affiliate in northern Virginia and interested community based organizations to equip this facility to make it more attractive to voluntary admissions (TVs, VCRs, radios, etc). A phone would be available to enable patients to keep in touch with family and friends while staying at the facility. The local Community Services Board would be approached to make substance abuse counseling available for residents that express interest. The training center would be approached to provide psychiatric counseling if required. VDH would provide effective discharge planning for residents. Daily activities would be planned to ease the psycho-social issues commonly associated with long term care. Transportation to the facility would be performed by current VDH staff and the cost of medications would be charged to the health district referring the patient.

Central Virginia Training Center appears to be the most versatile option explored in this study. It will meet the need for long term care for TB patients for years to come. It will provide a much needed intermediate setting between the HIP and prison in the case of legal isolation. By doing so, it may be successful in achieving the dual purpose of protecting the public while treating the patient.

Although the number of admissions is expected to be low, this too was expected in the case of HIP. Only six homeless TB patients were reported in Virginia in 1991 and because VDH was forced to pursue legal isolation on two of these patients, HIP was created. In its pilot year, 16 homeless TB patients were housed, almost a three-fold increase because the districts were advised a service was available. It is suspected the same thing may happen with long term care. The result will be fewer uninfected persons exposed to infectious TB, including drug resistant TB, fewer cases of drug resistant TB due to isolation and treatment of non-compliant TB patients, fewer new infections and, consequently, fewer new cases in the future.

1994 SESSION

LD5541443

HOUSE JOINT RESOLUTION NO. 189

Offered January 25, 1994

Requesting the Virginia Department of Health, in consultation with Virginia's teaching hospitals, to study the location of inpatient facilities for long-term care of patients with tuberculosis.

Patrons—Scott, Almand, Callahan, Darner, Hull, Mayer, Melvin and Van Landingham; Senators: Calhoun, Holland, E.M. and Howell

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Referred to Committee on Health, Welfare and Institutions

WHEREAS, since 1990, Virginia has reported an increase in the number of documented cases of tuberculosis where prior to 1990, the numbers of cases had steadily declined; and

WHEREAS, to add to this problem is the development of multidrug-resistant forms of tuberculosis which arise when patients do not complete the full treatment program and the disease eventually becomes resistant to traditional treatment modalities; and

WHEREAS, because it is a communicable disease, viable treatment is necessary and can be successful for those who follow the prescribed treatment; and

WHEREAS, it is important to all Virginians that effective steps be taken to minimize the adverse health effects of all forms of tuberculosis; and

WHEREAS, the 1993 General Assembly passed a provision that would set up the procedures for the isolation of those individuals who are infected with active tuberculosis and who, because they refuse or do not correctly follow standard medical treatment, pose a threat to others around them; and

WHEREAS, although isolation can be achieved in many places, including one's own home, no inpatient facilities have yet been identified for the long-term treatment of patients with complicated TB, multidrug-resistant TB (MDR-TB), and for those requiring other forms of isolation; and

WHEREAS, persons who need such facilities are often not acutely ill, but remain a threat to the public because of the long period of time necessary to render them non-infectious; and

WHEREAS, funding is obviously a major consideration in the identification of facilities; and

WHEREAS, the Virginia Department of Health has begun to deal with persons with tuberculosis in a more aggressive manner with some special measures, such as the homeless incentive program and directly observed therapy; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Virginia Department of Health, in consultation with Virginia's teaching hospitals, study the location of inpatient facilities for long-term care of patients with tuberculosis, particularly multidrug-resistant cases. The Department shall examine, but not be limited to, the potential of several options: (i) establishment of centers at state-funded teaching hospitals; (ii) utilization of private facilities as housing for appropriate TB patients; (iii) utilization of existing state-owned facilities such as unused Department of Mental Health, Mental Retardation, and Substance Abuse (DMHMRSAS) facilities; (iv) contract with private hospitals with payment to be made when beds are occupied; and (v) contract with existing state programs, such as existing DMHMRSAS facilities.

The Virginia Department of Health shall provide staff support for the study. All agencies of the Commonwealth shall provide assistance to the Department , upon request.

The Department shall complete its work in time to submit its findings and recommendations to the Governor and the 1995 Session of the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for processing legislative documents.