

**TOP FY 2000
Project Narrative**

University of Texas Medical Branch

**Grant # 48-60-00033
Galveston, TX**

1. Project Purpose A six-year old girl is shot at school by a school mate, a three-year old boy is shot in the face by his mother, an off-duty firefighter shoots his estranged wife in her home before killing three co-workers. (See [Appendix A](#)). Two established American institutions – home and school – have long been perceived as bastions of personal safety. That perception is crumbling under a growing awareness that these may be unsafe places, especially for vulnerable populations such as women and children. Early identification and timely intervention of mental and emotional health problems can prevent or reduce violence and other consequences of victimization. Such services are in short supply in the United States, especially in rural areas where coordinated and assertive community-based prevention,¹ early case identification, and rehabilitation programs are badly needed (Surgeon General, 1999²).

Through this project, telemedicine addresses such shortages by linking mental health providers at two universities and a regional mental health center with four rural community sites – a women’s shelter, two small independent school districts, and a maternal and child health clinic – that serve women and children in a nine-county area in Texas. The target populations are: (1) women exhibiting signs of anxiety, depression, and other mental health problems as a result of violence and abuse; (2) children of these women, especially those with disruptive behavior disorders and other identifiable chronic mental health problems; (3) children and adolescents in school settings who need consultation for behavioral, emotional, and learning disorders; and (4) staff, teachers, health professionals, and volunteers responsible for aiding, educating and caring for these women and children.

Community and Beneficiary Profile. The nine East Texas counties in this proposal (see Map of Proposed Service Area in [Appendix B](#)) cover over 7,100 square miles and have a combined population of just over 275,000. They are located in the Piney Woods, the center of Texas’ large commercial timber production. The economy is heavily dependent on forest products and other agricultural industries. Estimated 1997 per capita income in all nine counties was below the statewide average (\$23,707), ranging from \$19,719 to as low as \$15,888. All nine have been designated as Health Professional Shortage Areas (HPSAs) for mental health (see [Appendix C](#)). Seven are countywide medically underserved areas (MUAs). The other two have partial county MUA designations, one based on geography, and the other on an underserved poverty population.

The population of all the counties is predominately white, but African Americans comprise between 12.9% and 30.9% of residents by county (see [Appendix D](#), Table 1). Hispanics range from 1.3% to 11.4% and “other” less than 1.0% in all but Polk County, where 3.0% are Native American. Average monthly Medicaid rolls exceed 10.0% in all counties,

¹ For the purpose of this proposal, primary, secondary and tertiary prevention are defined as follows: (1) *primary prevention* lowers the incidence of a mental disorder or reduces the rate at which new cases of a disorder develop; (2) *secondary prevention* reduces the prevalence of a disorder by reducing its duration through activities such as early case finding, screening, and prompt effective treatment; (3) *tertiary prevention* includes activities that attempt to reduce the severity of a disorder and associated disability. Unless otherwise stipulated, the term “prevention” in this proposal refers to all three denotations.

² See Appendix O for complete references.

reaching as high as 17.7%.

Community Sites. The Women's Shelter of East Texas (WSET), a non-profit organization, is the only emergency program for battered women and their children in the nine county service area (Texas Council on Family Violence, 1998). Their services are free. WSET currently operates two 24-hour emergency shelters (40 bed total), six outreach centers, and a toll free crisis hotline. In 1999, WSET provided resident services to 536 individuals (266 women and 270 children), outreach services to 699 women, and handled almost 2,300 crisis calls, twice as many as in 1997. One third of the services were for women and children in Nacogdoches County, where the primary shelter is located, and the rest was distributed proportionate to the population among the other eight counties. Staff at the shelter estimate that 80 to 90% of WSET residents need mental health services (see Appendix C, Table 2 and [Appendix E](#)). Numerous studies have shown a strong correlation between violence in women's lives and depression, stress-related syndromes, substance abuse, and suicide (Fischback & Herbert, 1997; Frank & Rodowski, 1999; Sackett & Saunders, 1999). In addition, there is a relationship between children and adolescents who have been exposed to violence and violence in their own intimate behaviors (Chalk & King, 1998).

The two school districts, with a combined enrollment of just over 1,100, have a high rate of poverty, with 37% of the students at one school and 50% at the other eligible for federal school meal programs (the national average is about 20%). Epidemiological studies have identified a correlation between poverty and increased risk for mental and emotional disturbances in children. The U.S. Department of Health and Human Services estimates that between 11% and 13% of children in Texas age 9 to 13 have some type of serious emotional disturbance (DHHS, 1997). While not all these children are victims of violence, the presence of emotional/mental health symptoms places them, as well as those at the women's shelters, at risk for violent behavior. Other students in these schools who may need mental health services include those in foster homes and special needs children, who comprise about 18% of both schools' student body.

The Maternal and Child Health Clinic, located in Nacogdoches, is part of a 39-clinic-system that serves low-income women and children throughout East and Southeast Texas. They provide community-based case management for prenatal, postpartum, and family planning women, along with their infants and small children. Collaboration between primary care and mental health service providers is critical. Various studies over the last two decades have shown the need to identify physical abuse among pregnant women in order to prevent emotional and mental problems, further abuse, and improved pregnancy outcomes (Hillard, 1985; Culpepper & Jack, 1993, and Rodriguez, et al., 1999). Early identification and treatment will also reduce injuries and deaths to infants from mothers suffering from postpartum depression.

Services Currently Available. Partners in this project provide a majority of the mental health services now available. The state's Mental Health/Mental Retardation (MHMR) system's regional center, The Burke Center, has offices in Nacogdoches and Lufkin and serves residents in the targeted counties. The only service available to children through the Burke Center is early childhood intervention from birth to age two. Children in need of inpatient services must obtain them approximately 70 miles from home in a 16-bed facility. Inpatient and outpatient psychiatric

care is available 200 miles away at the University of Texas Medical Branch (UTMB) in Galveston, especially for residents of the seven counties (all but Angelina and Houston) that contract with UTMB to provide specialty and emergency services to indigent and low-income residents. UTMB's Center for Restorative Care (Galveston) and the Division of Nursing at Stephen F. Austin (SFA) State University (Nacogdoches) are currently working with the two school districts in providing services to children with special needs. The Division has also worked closely with the women's shelter on mental health education and prevention activities as well as in planning for this proposal.

Specific Problems That Must be Addressed. First, there is a shortage of mental health services throughout deep East Texas (see [Appendix C](#)). The closest comprehensive psychiatric hospital that provides inpatient and outpatient services to indigent and low-income populations is over 200 miles away. Second, women and children in this area are at risk of emotional and mental health problems because of high incidence of family violence and widespread poverty. Third, there is no coordinated network of local community groups and health professionals to provide services to these populations.

Because of shortages in trained staff, the Burke Center gives priority to adults with bipolar disorders and schizophrenia, but not acute or chronic depression, anxiety disorders, post traumatic stress disorders, or borderline personality disorders, all common among persons experiencing violence or abuse. Only two child psychiatrists practice in the nine-county area and one is not seeing new patients. The other is moving in April. In December 1999, the only children's and adolescent inpatient facility in the area closed. There is, and will continue to be, a serious shortage of child and adolescent psychiatrists in east Texas. This shortage is especially acute in rural areas with high percentages of youth poverty (Thomas & Holzer, 1999).

Reductions in mental health funding have generated challenges for providing such services in already underserved rural areas. Yet recent studies show increased prevalence of violence and abuse among families in underserved areas. Families and school personnel need assistance in recognizing potential emotional and mental health problems in children. Schools and community agencies – struggling with inadequate resources – do not always recognize mental health problems among their clients or have the skills to provide preventive services.

Proposed Solutions to the Problems. (1) Increase access to mental health care services for women and children through telemedicine linkages with the Department of Psychiatry and Behavioral Health at the University of Texas Medical Branch (UTMB) in Galveston; (2) Inform and educate school personnel, staff at the women's shelter, health and social service providers, law enforcement officials, and families to recognize treatable disruptive behaviors among children and adolescents; and (3) Develop a community network led by the Division of Nursing at Stephen F. Austin State University that can coordinate health and social services to targeted populations in a timely and appropriate manner.

Anticipated Outcomes. (See [Appendix F](#) for Proposed Solutions, Evaluation Measures, and Anticipated Outcomes) Attainment of project outcome goals will result in meeting the following TOP priorities: (1) Increased access to services; (2) Altered referral patterns due to

providing more services closer to the patient's home; **(3)** Improved quality and scope of care; and **(4)** Improved patient satisfaction with care because of quicker response, better coordination, and improved access.

Long Term Effects. At the local level, this project will develop a mental health network based on a combination of telemedicine and coordinated local efforts. There will be an improvement in emotional and mental health among the targeted populations due to this network's ability to provide needed services in a timely and appropriate manner. Undergraduate and graduate placements for SFA nursing, social work, and psychology students will ensure continuation of services and facilitate an increase in WSET and school staff knowledge and skills related to mental health issues. With SFA's involvement, the project will begin to include information in the curriculum of teaching and nursing students at SFA related to violence prevention, domestic abuse, and other topics pertinent to this application.

Linkages between SFA and UTMB will be strengthened, promoting sharing of other prevention, treatment, and rehabilitation services using telemedicine. Statewide, the development and demonstration of psychiatric telehealth consultation and its cost effectiveness in meeting needs of an underserved population will provide the foundation for a redistribution of funding from state MHMR to subcontractors such as the UTMB-SFA network and/or a redefining of MHMR priority criteria to include major depression.

2. Innovation. This proposal uniquely focuses on utilizing a combination of telemedicine and local resources to develop a continuum of mental health prevention and rehabilitation services to reduce violence and consequences of victimization among at-risk populations in a rural underserved area. With telemedicine, this project will address three national, as well as local, issues. First, there is increasing evidence that poor rural populations are at higher than average risk of emotional and mental health problems. Second, parallel studies point towards a high rate of untreated – and often undiagnosed – depression, anxiety disorders, and borderline personality disorders among victims of domestic violence (Surgeon General, 1999; U.S. Preventive Health Services, 1996). And, third, there is a need to prevent violence in schools. Concern over these issues has led to a growing national consensus that identification of behaviors that relate to emotional/mental health problems in children and families is a shared community responsibility. This project seeks to strengthen the community response through organization and technology.

Other telemedicine projects, many funded by NTIA, have addressed problems of providing mental health services to special needs children, individuals in crisis, or to special populations in rural areas. None of them, however, has targeted a continuum of mental health services, through telemedicine and coordinated local services, for women and children experiencing emotional and mental health problems because of violence or abuse ([Appendix G](#)).

3. Diffusion Potential. As pointed out above, the problems addressed in this proposal are not unique to East Texas. Nor is the use of telemedicine to deliver mental health services limited to the settings selected for this project. The technology is also applicable for homeless shelters, alcohol and drug treatment centers, runaway centers, halfway houses, jails and detention centers, nursing homes and any other setting where there is a high prevalence of emotional and mental health problems in an underserved environment.

The major strength of this project is its relative simplicity. Replication depends on two critical factors: the availability of the equipment and the willingness, at both ends, of programs and individuals in those programs to use it. Telemedicine services in these settings – the women’s shelter, the schools, and the clinic – will serve the populations at-risk *and* facilitate communication with other community entities also serving these same populations. Travel to care is minimized, for both patient/ client and provider/caregiver. The technology lends itself to both one-on-one and small group sessions, allowing a range of services from individual patient care to family and provider conferences, as well as providing education in telehealth technology and services among faculty and students at SFA, community health and social service providers, and faculty, students, residents and fellows at UTMB. Without this project, women and children seeking services would have to continue their current practices of traveling to Galveston, as the only comprehensive indigent care facility in the state, or do without care.

4. Project Feasibility. The ability to observe patient/client behaviors are an important component of mental health care. The project will utilize standards-based interactive video conferencing systems already established at the two school districts, Stephen F. Austin, at UTMB, and - soon to be installed - at the maternal and child health clinic (see [Appendix H](#)). Three units have not yet been brought into the UTMB system, but will be operational by project start-up. TOP funds will be used to equip the Burke Center and the women’s shelter in Nacogdoches. The new equipment will be connected over T-1 lines with an ISDN overlay to the existing video network at UTMB. The network is interoperable and can be linked with other public or private networks through bridges at UTMB or SFA. Because the network is a closed system, there is no danger of patient information being intercepted during transmission. It will be the responsibility of both UTMB and SFA to train individuals at both ends in use of equipment and to establish policies and procedures protecting patient confidentiality.

All systems will support larger monitors, making them easily adaptable for presentations to groups. Also included is equipment to provide Multipoint Conferencing (MCU) capabilities. Basic hardware configuration will be matched to the needs of the individual sites. The telemedicine equipment in this proposal will be included in UTMB’s current maintenance, upgrade and support activities.

Technical and Organizational Ability of Project Team. The project executive leadership team will be composed of the three project directors. The project director, Deborah E. Seale, MA, Interim Director for the Center for Telehealth and Distance Education at UTMB will serve as administrative and fiscal agent for this project. A co-project director, James M. Russell, MD, Medical Director for Outpatient Services - Dept. of Psychiatry and Behavioral Sciences at UTMB will serve as the medical director for the project. He will recruit and oversee child and adult psychiatry services provided. A co-project director, Glenda Walker, RN, DSN, Director for the Division of Nursing at SFA will be responsible for regional oversight and management. Representatives from Women’s Shelter of East Texas, Burke MHMR Center, Martinsville and Woden Independent School Districts, UTMB’s Department of Psychiatry, Center for Restorative Care (Pediatrics), and Regional MCH Program, the Departments of Social Work and Psychology at SFA will be selected to sit on the project’s advisory council. UTMB’s Telemedicine Training Institute will provide training for the project. UTMB’s Video Operations Group is adept and

experienced at network management and operation, computer and videoconferencing management, operations, and user support. Special expertise includes terrestrial, satellite, microwave, television, and videoconferencing over T-1, IP, and ISDN networks.

Between 1994 and 2000, UTMB providers have conducted over 27,000 patients visits using videoconferencing technology (see Appendix I). Over 3,000 of those visits have been in psychiatric. Also, Dr. James Lukefahr, a UTMB pediatrician, uses a store-and-forward technology, Second Opinion Software, to assist in determining whether child abuse has occurred. This software is promoted statewide by the Telemedicine Network of the Children's Justice Act Project, a group of health professionals working with the Texas Department of Protective and Regulatory Services, The agency is responsible for protecting children from abuse and neglect. Dr. Lukefahr is also a council member of the Children's Trust Fund of Texas, a group charged with planning and funding child abuse and neglect programs in the state.

Budget, Implementation Schedule, and Timeline. (See Timeline in Appendix J.) Federal funds are requested over a 3-year period for direct costs of \$385,004, which are matched by \$407,484 (51%) in direct costs. The total project costs are \$1,130,753 including \$338,265 in indirect costs over the three-year period. Indirect costs are calculated at 49% for UTMB and 50% for SFA.

Almost half of this amount will be used for personnel (see [Appendix K](#) for job description for Project Manager) to establish the service, develop the network, coordinate services, provide documentation and evaluation services, and train others in telemedicine. Federal funds will be used to purchase equipment for the women's shelter and the Burke Center, pay for T-1 circuits and access fees, travel, and supplies. The budget does not reflect Universal Service Fund (USF) rates, since the rates we can achieve under the Texas Public Utility Act of 1995 are less expensive than those from the USF.

Sustainability. Sources of non-federal or shared state/federal funds that can be used to meet some of the expenses of providing care to the targeted populations include: (1) the Texas Healthy Kids Program, (2) the Children's Health Insurance Program (CHIP), (3) Medicaid, (4) Medicare, and (5) the Texas Crime Victim's Compensation Fund. Although all except CHIP are current programs, none are used to their full potential either because of fragmented services or lack of availability or access to care. (See [Appendix L](#) for a discussion of these programs.)

UTMB has embraced telehealth as an important and rapidly developing component of educational, administrative and patient care services. Institutional resources have been dedicated to promoting telehealth both in Galveston and throughout the UTMB outreach programs. Efforts are ongoing through both UTMB and SFA to secure additional funding for telehealth through federal, state, and foundation grants. Efforts to sustain this project will focus on foundations such as the Hogg Foundation, Klingenstein Foundation, The Robert Wood Johnson Foundation, and the Center on Crime, Communities, and Culture, that support programs in mental health, prevention of violence, and at-risk women and children. A full search of foundation databases will be completed within the first year of the project.

5. Community Involvement. (See Letters of Commitment in Appendix M). This project has

been developed at the request and in partnership with the community. Although much of the equipment is in place and the remainder will be installed during the first year, the critical component to success is in the integration of providers and the services they represent and clients/patients and their willingness to use services once they are available. Some of the members of the partnership have a long and successful working relationship with the communities to be served, but the entire partnership has never worked together as an integrated team. The first year of the project will focus upon building the project team. There is great variation in the resources available to different project members and therefore variations in what each will be expected to contribute. Each partner's reasons for participation differ, but there is strong consensus around the identified problems and the project's proposed solutions.

The second year is devoted to strengthening the network and the delivery of services. The third year focuses on identifying problems and gaps in both services and partnership/stakeholder organization. Documentation and evaluation that will help with this process will continue throughout the project.

Priority in developing relationships with stakeholders will be given to those entities whose participation is essential to a basic network of services and knowledge. This includes local health-related resources such as pharmacies, independent practitioners, and teachers, counselors, and nurses at schools not on the project team. Other groups that will be given priority are those that serve persons in economic emergencies. This includes Salvation Army, Red Cross, church groups, and food pantries.

Responsibilities of Partners and Role Changes Over Time. The primary focus for initiating outreach to community stakeholders will be within the region itself. That is why all of the federal dollars for personnel are going to the region. The women's shelter and Stephen F. Austin have maintained active involvement and collaboration with a number of public agencies in the targeted counties, as well as homeless networks, and community coalitions. SFA led a regional effort to develop a community plan identifying gaps in services, community needs, and suggestions for increasing agency collaboration. Others involved in that planning process are included in the list of community stakeholders in [Appendix N](#). The two school districts will participate in training, staff education, case finding, and arranging and participating in group counseling sessions. The MCH clinic will provide access to the target populations through identification and referral as well as by providing health care to women and children brought into the project by other partners or stakeholders. UTMB will provide administrative oversight, technological expertise, evaluation services, psychiatric care through the Department of Psychiatry, and services for children with special needs. The Burke Center, as the primary provider of mental health services in the targeted service area, will assure that new services brought into the area by this project are integrated into those already in place.

We expect that these roles will change as the project becomes fully operational. As more entities are pulled in, it is inevitable that there will be more sharing of responsibilities and an ongoing need for redefining and clarifying roles and accountability. However, as long as goals are shared, organizational conflicts can be minimized and resolved. Also, there are long-standing relationships among these organizations. UTMB and SFA have been partners in distance

education and telehealth since 1993. Almost all of the psychiatrists at the Burke Center are alumni of UTMB. SFA will serve as the regional hub for the network mirroring its leadership in the community. SFA's director for the Division of Nursing is a psychiatric nurse with a specialty in family and child abuse. She is long committed to this cause and the community.

Privacy. The network used for telemedicine at UTMB is not open to the Internet or other public portal. The same privacy protocols used in the normal live physical clinic are upheld in a telemedicine clinic in regards to privacy of information. The project itself will designate a privacy official, implement safeguards to protect information from misuse, provide a means for consumer complaints and correction, enforce a sanctions for workers and partners who violate privacy policies, and provide privacy training to workforce and others who come in contact with the system at any location. In addition, we will integrate Guidelines for Videotaped Documentation of Episodes of Medical Care, published by the Interagency Committee on Medical Records on December 6, 1999 in the *Federal Register*, into our policies and procedures. UTMB has formed a group to study the impact of the Health Insurance Portability and Accountability Act of 1996 on telehealth services.

6. Reducing Disparities. Just over 40% of Texas households is estimated to own computers, a percentage that places the state at the lower middle range of in-home computer access. (See Kominski & Newburger, 1999; NTIA, 1999; and White House, 2000). A quarter of the population is believed to have home Internet access, which is about mid-range for all states. A series of national studies of computer use found that there are wide racial differences, with whites about 40% more likely than blacks and Hispanics to use a computer. Persons with a bachelor's degree are five times more likely than those with some high school. One study estimates that 5% of rural households with incomes below poverty have computers, a finding that suggests low access for a significant number of the target population. A positive finding suggests that schools tend to be the best equalizer across racial and income divides, with differences in use of computers and the Internet more equal among children than among adults.

In the larger communities – especially Nacogdoches and Lufkin – the presence of a state university and community college, as well as the demands of local industries, have encouraged the development of telecommunication resources. However, the electronic infrastructure in the service area is very fragmented. Multiple telephone companies serve the counties, with all but Southwestern Bell being local or regional carriers. There are multiple electric companies, with some families having access only through co-operatives. In spite of the state's aggressive attempts to bring local governments on line, only three of the nine counties have an official Web site and, outside of the major cities, very few municipalities have any Web presence. Many of the area's schools are on-line, however, including Martinsville and Woden. All the counties belong to the Deep East Texas Council of Governments, which collects no information on computer-resources in homes or businesses.

Strategies for Overcoming Barriers to Access. The presence of sophisticated telecommunications in the schools, women's shelter, MCH clinic, and mental health agencies creates both a problem and an opportunity for introducing and educating members of the targeted populations to the use of computer-based technologies. The problem is that the reach from non-

user to user may be very wide and the initial introduction may take place in stressful environments such as the women's shelter. The opportunity is that a service is being offered that would otherwise not be available at a time when assistance is badly needed. By placing videoconferencing at or near the point of need, many access barriers can be reduced or eliminated. Project partners will use every opportunity available to introduce residents of the service area to the benefits of telemedicine in the very early stages of the project.

7. Evaluation and Documentation. (See Appendix F.) We will hire an evaluator who is independent of the project. The evaluator will refine the evaluation plan, design the evaluation survey instruments, collect and analyze evaluation data, and prepare a report annually. UTMB has at least 70 faculty with interest in or working in health services research. Of these, some 25 have published results in peer-reviewed papers or books, and approximately 20 have or have had externally funded projects. UTMB is in the process of establishing an Office of Health Services and Health Outcomes Research under the management of the Vice President for Research. The project will work with this new office to identify an evaluator for the project. We will give priority to experience in evaluating preventive medicine, community health, or rural health care services. A total of \$40,000 over three years has been budgeted for evaluation services.

The design of this project has incorporated evaluation throughout the development and implementation phases. Not only does this approach make evaluation easier, it also demands that the feasibility of various components of the project be questioned during the design phase. Because of the nature of the project, a control group is not feasible. However, efforts will be made within the limitations of patient confidentiality, to identify women who have sought care as a result of family violence who have not been cared for at the women's shelter and to examine their outcomes over time as a comparison group to those women who have received services in the shelter. Evaluation of project objectives, processes, and outcomes, as well as examination of barriers and unintended consequences, will rely primarily on non-experimental and quasi-experimental measures such as utilization data, trends over time, pre- and post-tests, key informants, satisfaction surveys, expenditure and resource allocations, and project documents and records. Monitoring and evaluation procedures will be emphasized at staff meetings to assure that all project staff are familiar with project objectives and how they will be evaluated.

As part of the documentation and evaluation procedures, an information system will be established for the project, including inputs (time, resources), outputs (activities completed, consult hours), and outcomes (fewer emergency room visits, reduced injuries, less school disruption). An individual in each location will be assigned the responsibility of maintaining records or assuring that documentation meets established project standards. All project reports will include not only evaluation results, but also detailed explanations of how those results were used, or will be used, to reinforce, refine, or modify project activities.