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Technology Opportunities Program

Final Evaluation Report

East Texas Mental Telehealth Program

10/01/2000 – 9/31/2003

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Table of Contents

Table of Contents	2
List of Tables	3
Introduction	4
Project Outcomes	6
Conclusion	29
Summary and Future Directions	30
List of Appendices	31

List of Tables

Table 1: Resident Clients by Age & Race-----	6
Table 2: Non-Resident Clients by Age & Race -----	7
Table 3: Telemedicine Clients by Race & Age-----	8
Table 4: Telemedicine visits -----	9
Table 5: SCL-90-R Scores -----	12
Table 6: Diagnoses -----	13
Table 7: Medications Dosages & Counts-----	15
Table 8: Patient by Patient Summaries/Average -----	17
Table 9: Clients Scores/Times Survey Answered-----	18
Table 10: Question by Question Summaries/Average-----	19
Table 11: Professional Presentations TOP East Mental Health Project-----	23
Table 12: Women’s Shelter of East Texas – Consolidated Volunteer Report -----	27
Table 13: Workshops List -----	28

Introduction

Through this project, telemedicine linked mental health providers at two universities and a regional mental health center with four rural community sites – a women’s shelter, two independent school districts, and a maternal and child health clinic – that serve women and children in a nine-county area in Texas (see Appendix 1).

The two universities, the University of Texas Medical Branch (UTMB) and Stephen F. Austin State University (SFASU) are located in Galveston and Nacogdoches, respectively. The Telehealth Center and the Department of Psychiatry and Behavioral Sciences at UTMB worked together to provide equipment and expertise to make the project possible. SFASU provided staff support from their nursing and math departments.

The Burke Center is a JCAHO behavioral healthcare organization that provides a range of mental health services based in Lufkin. Follow-up treatment referrals for WSET clients were made to the Burke Center.

The target populations were:

- Women exhibiting signs of anxiety, depression, and other mental health problems as a result of violence and abuse.
- Children of these women, especially those with disruptive behavior disorders and other identifiable chronic mental health problems.
- Children and adolescents in school settings who need consultation for behavioral, emotional, and learning disorders.
- Staff, teachers, health professionals, and volunteers responsible for aiding, educating and caring for these women and children.

The original outcomes are as follows:

1. Increased outpatient mental health care referral/treatment among women at Women’s Shelter of East Texas (WSET), RMCH clinic, and Burke Center.
2. Increased psychiatric inpatient referral/treatment among women at Shelter, RMCH, and Burke Center.
3. Increased outpatient mental health care referral/treatment among children and adolescents at schools, shelter, Burke Center, and RMCH.
4. Increased psychiatric inpatient referral/treatment among children and adolescents at schools, shelter, Burke Center, and RMCH.
5. Reduction over time in rates of treatable mental illnesses among children & adolescents at shelter, rural schools, or the RMCH.
6. Increased treatment for depression and anxiety among women at the women’s shelter, the RMCH, or seeking care at the Burke Center.
7. Educational and preventive activities will be developed and successfully implemented in the target communities.
8. Increased knowledge/awareness among teachers and school nurses regarding prevention and identification of treatable disruptive behaviors in students.
9. Increased knowledge and awareness among health care and public safety personnel of signs of potential domestic abuse in women in children.

10. Decreased recidivism rate for domestic violence among women receiving services through the women's shelter and RMCH clinic.
11. Increased appropriate and successful referrals to the Texas Crime Victims' Compensation Fund among women at the Women's Shelter and the RMCH.
12. Increased number of agencies and individuals referring women to shelter for services and in increase in number of student volunteers in shelter or schools.
13. Increase in number of parents and organizational representatives at workshops and conferences on domestic violence.

PROJECT OUTCOMES

1. Increased outpatient mental health care referral/treatment among women at Shelter, RMCH, and Burke Center.

During the time of the grant, a total of 38 women were referred for evaluation. 35 of the women, or 92%, completed psychiatric evaluation and 34 initiated treatment. 25 of the women, or 74%, were treated successfully and referred for continued mental health care.

a. Population Demographics

The total sample was of 38 female clients.
Average age of TOP clients: 35.4 years.

The following tables, *Table 1: Resident Clients by Age and Race (October 1999-September 2003)* and *Table 2: Non-Resident by Age and Race (October 1999-September 2003)* shows the different population demographics from age 0 to 51 and up and by race.

Table 1: Resident Clients by Age and Race (October 1999-September 2003) shows a total of 1033 women.

Table 2: Non-Resident by Age and Race (October 1999-September 2003) shows a total of 2059. Table 1 and 2 combined represent a total of 3092 women.

Table 3: Telemedicine Clients by Race & Age shows a total of 27 Caucasian women as telemedicine clients, 2 Hispanics, and 11 Afro-American.

Table 1: Resident Clients by Age and Race (October 1999-September 2003)

October 1999 – September 2000					Race	Total
Age 0-17	Age 18-24	Age 25-40	Age 41-50	Age 51 & Up		
105	27	44	29	5	Anglo	210
45	11	14	6	2	Afro-American	78
48	11	10	3	1	Hispanic	73
2	0	0	0	0	American Indian	2
0	0	0	0	0	Asian Pacific	0
10	1	0	0	0	Other	11
Total: 210	Total: 50	Total: 68	Total: 38	Total: 8	TOTAL:	374
March 2002 – September 2003					Race	Total
Age 0-17	Age 18-24	Age 25-40	Age 41-50	Age 51 & Up		
232	53	100	42	7	Anglo	434
55	10	21	13	2	Afro-American	102
64	10	17	3	1	Hispanic	95
1	1	2	3	0	American Indian	7
2	0	0	0	0	Asian Pacific	2
13	4	2	0	0	Other	19
Total 367	Total: 78	Total: 142	Total: 61	Total: 11	TOTAL:	659

Table 2: Non-Resident Clients by Age and Race (October 1999-September 2003)

October 1999 – September 2000							
Age 0-17	Age 18-24	Age 25-40	Age 41-50	Age 51 & Up	Race	Total	
31	55	116	46	15	Anglo	266	
41	21	45	23	5	Afro-American	145	
3	7	17	3	1	Hispanic	31	
0	0	2	0	0	American Indian	2	
0	0	0	0	0	Asian Pacific	0	
1	3	1	1	0	Other	7	
Total: 76	Total: 86	Total: 181	Total: 73	Total: 21	TOTAL:	437	
March 2002 – September 2003							
Age 0-17	Age 18-24	Age 25-40	Age 41-50	Age 51 & Up	Race	Total	
284	207	434	124	57	Anglo	1106	
65	51	127	43	8	Afro-American	294	
50	32	62	16	3	Hispanic	163	
	3	6	8	2	American Indian	19	
2			1		Asian Pacific	3	
20	7	8	2	0	Other	37	
Total: 421	Total: 300	Total: 637	Total: 194	Total: 70	TOTAL:	1622	

Table 3: Telemedicine Clients by Race & Age

AGE	CAUCASIAN	HISPANIC	AFRO-AMERICAN
18	1		
19	1	1	
21	5		1
22		1	
23	1		1
25	3		
26	2		
28			1
29	1		
30	2		
31	1		
32	1		1
34			1
35	1		
36	1		
38	2		
40			2
43	1		2
45			1
47			1
48	1		
49	1		
53	1		
54	1		
TOTAL	27	2	11

b. TOP Telemedicine Visits

Christopher Thomas, M.D., Professor with the UTMB Department of Psychiatry and Behavioral Sciences and Residency Training Director for the Division of Child & Adolescent Psychiatry, completed 110 telemedicine visits over the project period of 19 months.

Table 4: Telemedicine Visits

Month	Year	Telemedicine Visits	Total 2002	Month	Year	Telemedicine Visits	Total 2003	GRAND TOTAL
March	2002	4		January	2003	6		
April	2002	4		February	2003	2		
May	2002	12		March	2003	3		
June	2002	6		April	2003	4		
July	2002	4		May	2003	2		
August	2002	5		June	2003	5		
September	2002	9		July	2003	12		
October	2002	15		August	2003	5		
November	2002	5		September	2003	5		
December	2002	2	66				44	110

2. Increased psychiatric inpatient referral/treatment among women at Shelter, RMCH, and Burke Center.

No women from the target service area were referred or self-referred to UTMB from October 1999 to September 2000.

Prior to program, 4 to 8 clients were sent each year to Rusk State Hospital for psychiatric inpatient treatment.

No clients required hospitalization for psychiatric treatment during the 19-month period in which telepsychiatry services were provided by the grant. The grant reduced the need for psychiatric inpatient services.

During one three-month period, April through June 2003, there were eleven consultations from WSET to UTMB.

This data suggests that more women were referred for psychiatric consultation. Since hospitalizations were avoided, this suggests that the telemedicine program allowed for accurate thorough assessment and intervention for the subjects.

3. Increased outpatient mental health care referral/treatment among children and adolescents at schools, shelter, Burke Center, and RMCH.

Dr. Thomas saw only two children in the course of the study period. Both of these children were referred for evaluation/treatment by the WSET. One child had a parent/child relationship problem, but no mental disorder. The other child was diagnosed with PTSD and was referred the child to the Burke Center for further treatment.

Data from these clients has been removed from the evaluation to protect the anonymity of the subjects. With such a small number of clients in this group, additional data analysis was not possible.

No children were referred to the project from the Burke Center, the RMCH clinic or either of the two school districts.

4. Increased psychiatric inpatient referral/treatment among children and adolescents at schools, shelter, Burke Center, and RMCH.

No children were referred to UTMB for inpatient treatment from October 1999 to September 2003.

5. Reduction over time in rates of treatable mental illnesses among children & adolescents at shelter, rural schools, or the RMCH.

Due to the nature of the grant, very few children were seen. Relationships with the two independent school districts and the RMCH clinic were established, but there was not adequate time to implement regular programs at these facilities. In addition, baseline data is not available and no data kept by the different participating entities.

A substantial longitudinal study would be required to capture this data. Such a study could be a fruitful avenue for further research.

6. Increased treatment for depression and anxiety among women at the women's shelter, the RMCH, or seeking care at the Burke Center.

34 of the clients, or 97% of those evaluated, were treated for symptoms of severe and persistent depression and/or anxiety.

Before the 19-month grant period, clients were evaluated for mental health issues using the SCL-90-R.

a. SCL-90-R

The SCL-90-R was used as a screening questionnaire for psychiatric symptoms to evaluate all clients entering the East Texas Women's Shelter. Test scores on the SCL-90-R reflect psychological symptom patterns.

The SCL-90-R was chosen as a screening instrument for the following reasons:

- Written on a sixth grade reading level.
- Established norm groups exist: adult non-patients, adult psychiatric outpatients, and adult psychiatric inpatients.
- Easily administered by non-psychiatric professionals in approximately one-half hour including instructions.
- Can be quickly hand scored.

The SCL-90-R is a 90-item, self-report symptom inventory. It measures current psychological symptom status with a time reference of "the past 7 days including today."

The symptoms scales for the SCL-90-R are: somatization (SOM), obsessive compulsive (O-C), interpersonal sensitivity (I-S), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), and psychoticism (PSY). Three additional groups of questions are: the global severity index (GSI), the positive symptom distress index (PSDI), and the positive symptom total (PST).

Scores for each of the nine factors are the average rating given to the symptoms of that factor. The remaining seven items do not measure any particular factor, but are evaluated qualitatively. The GSI represents the average rating given to all 90 items. The PST is the number of symptoms complained of, i.e., the number of items rated higher than zero. The PSDI is the average rating, from 1 to 4, given to those symptoms which are complained of, i.e., not rated "0". Raw scores for each of the primary symptoms are converted into standardized scores.

The summary scores for this project show that the rates of mental distress and complaint were extremely high among all clients, comparable to the average scores found in psychiatric clinic populations (commonly called the Clinic T Score). The program began by using the Clinic T Score as the cutoff for entry into the program, but a midpoint analysis revealed that there was no significant difference between the clients meeting that criteria and those that did not (i.e., the overall client population on average was similar to a psychiatric outpatient clinic population age). Since no significant difference was found for shelter clients using the SCL-90R, it was decided to offer psychiatric evaluation to all women entering the shelter from that point. Only outpatient clients of the shelter still required a score above the Clinic T Score.

Table 5: SCL-90-R Scores

	SOM	OC	IS	DEP	ANX	HOS	PHOB	PAR	PSY	GSI	PSDI	PST
Average Overall	59	57	55	57	54	52	55	56	55	57	55	57
Average TOPS	62	59	57	60	57	55	56	58	58	61	59	60
Average non-TOPS	55	54	53	54	51	49	55	54	52	54	52	55

The descriptive statistics from the SCL-90-R scale are available for a total sample of 79 patients. A Clinic T Score (higher than average score) determined the qualifying point to refer patients for further mental health treatment: 38 had a score that qualified them for further mental health evaluation (TOP), and forty-one were referred for the regular counseling program offered by the WSET as their scores on the SCL-90-R didn't qualify them for further mental health referral and evaluation. Patients who scored high enough on the SCL-90-R forms and met the specific criteria for the program were processed. After their initial evaluation, they were scheduled with the psychiatrist for a telemedicine consultation.

In general, these women screened scored highest in four symptom groups: somatization, depression, anxiety, and psychosis. The subscales of the SCL-90-R revealed that clients had markedly elevated scores for problems with somatic complaints, anxiety and depression, which were consistent with the final diagnosis.

b. Diagnoses Codes

A total of 59 diagnoses were observed in the 38 TOP clients, as follows:

- 19 Prolonged Post Traumatic Stress Disorder
- 11 Recurrent Depressive Psychosis-Unspecified
- 4 Depressive Psychosis-Severe
- 4 Bipolar Affective Manic-Unspecified
- 2 Recurrent Depressive Psychosis-Moderate
- 2 Bipolar Affective NOS
- 2 Combined Drug Dependency NEC-Remission
- 2 Alcohol Abuse-Unspecified
- 2 Cannabis Abuse-Unspecified
- 1 Schizoaffective-Unspecified
- 1 Bipolar Affective Depression-Unspecified
- 1 Panic Disorder
- 1 Multiple Personality
- 1 Agoraphobia with Panic
- 1 Somatization Disorder
- 1 Borderline Personality
- 1 Barbiturate Abuse-Unspecified
- 1 Cocaine Abuse-Unspecified

The average number of diagnoses per patient was 2.36.

36 patients had a first diagnosis, 19 a second, 3 a third, and only one had a fourth diagnosis.

The most prevalent diagnosis, prolonged PTSD, was the primary diagnosis in 12 of the TOP clients (32%), and the secondary diagnosis in 7 (18%). Recurrent Depressive Psychosis as a first diagnosis was second with 11 clients (29%).

Only one client (3%) had any kind of substance abuse as a first diagnosis.

Table 6: Diagnoses

Diagnoses Names	Diagnosis				TOTAL
	DX1	DX2	DX3	DX4	
295.70 - SCHIZOAFFECTIVE-UNSPEC	1				1
296.23 - DEPRESS PSYCHOSIS-SEVERE	2	2			4
296.30 - RECURR DEPR PSYCHOS-UNSP	11				11
296.32 - RECURR DEPR PSYCHOS-MOD	1	1			2
296.40 - BIPOL AFF MANIC-UNSPEC	4				4
296.50 - BIPOLAR AFF DEPR-UNSPEC	1				1
296.70 - BIPOLAR AFFECTIVE NOS		2			2
300.01 - PANIC DISORDER		1			1
300.14 - MULTIPLE PERSONALITY	1				1
300.21 - AGORAPHOBIA WITH PANIC	1				1
300.81 - SOMATIZATION DISORDER	1				1
301.83 - BORDERLINE PERSONALITY		1			1
304.80 - COMB DRUG DEP NEC-REMISS		2			2
305.00 - ALCOHOL ABUSE-UNSPEC		1	1		2
305.20 - CANNABIS ABUSE-UNSPEC		1		1	2
305.40 - BARBITURATE ABUSE-UNSPEC			1		1
305.60 - COCAINE ABUSE-UNSPEC	1				1
305.70 - AMPHETAMINE ABUSE-UNSPEC		1	1		2
309.81 - PROLONG POSTTRAUM STRESS	12	7			19
TOTAL	36	19	3	1	59

c. Medication Breakdown

A total of 45 prescriptions were issued.

The average number of medications per patient was 2.5.

There were 33 counts of a first medication, 10 of a second, and 2 of a third.

The total count of medication is as follows:

- 17 Zoloft
- 7 Paxil
- 4 Lexapro
- 3 Effexor
- 3 Zyprexa
- 2 Prozac
- 2 Remeron
- 2 Seroquel
- 1 Lithium
- 1 Neurontin
- 1 Serzone
- 1 Synthroid
- 1 Trileptal

The most commonly prescribed drug, Zoloft, accounted for 17 prescriptions (38%).

Table 7: Medications Dosages & Counts

Medication Names	Medication Dosage (mg) & Counts						TOTAL
	RX1	Dosage - Count	RX2	Dosage - Count	RX3	Dosage - Count	
Effexor	3	75 - 2 150 - 1					3
Lexapro	3	5 - 1 10>20 - 1 5>10 - 1	1	20			4
Lithium	1	300					1
Neurontin			1				1
Paxil	6	20 - 4 25 - 2	1	12.5>25			7
Prozac	2	10 - 1 20 - 1					2
Remeron			1	15	1	30	2
Seroquel	1	50>100			1		2
Serzone	1						1
Synthroid	1						1
Trileptal			1	450			1
Zoloft	15	25>50 - 5 50>100 - 3 100 - 2 75 - 1 25>150 - 1 50, 150<125 - 1 25>100 - 1 25/50/75, >100 - 1	2	25>50 - 2			17
Zyprexa			3	5 - 1 10 - 1 5>10 - 1			3
TOTAL	33		10		2		45

d. Patient Satisfaction Data

A patient questionnaire evaluated the overall impressions and satisfaction levels of patients regarding the telemedicine visits.

The patient satisfaction questionnaire revealed a uniformly excellent rating of all aspects of the telemedicine visit. Not only were they very satisfied with the evaluation session, but also with additional treatment sessions. The only item with a lower rating was on Part 1-Question 7 concerning confidentiality and privacy.

The patients did not feel their visit was confidential, perhaps because a counselor and psychiatric nurse practitioner were present during the sessions. However, when asked by the psychiatrist if they felt comfortable in proceeding with sessions with those people in the room, the patients were free to ask the staff to leave.

The patient asked the staff to leave the room in only one encounter.

It was necessary to have additional staff present with the patients during these sessions because of the high rate of suicidal ideation among these patients.

Uniformly there was a high satisfaction rate with a 4.7 mean response to the patient satisfaction survey (based on a Likert scale of 1-5, 1 equaled "Strongly Disagree" to 5 equaled "Strongly Agree"). The satisfaction levels remained high for follow-up clinic appointments.

Table 9: Patient by Patient Summaries/Average scores: Column 1 shows the client numbers (each client was given a specific identifying number), column 2 is the response (how many times they took the survey), columns 3-7 are the average score for each time the clients took the survey.

There were 44 clients who took the survey at least once, 24 twice, 17 three times, 10 four times, and only one five times.

Among the clients who took the survey the average answer scores per client per time they answered the survey is as follows:

Table 8: Patient by Patient Summaries/Average

Client #	Responses (how many times the survey was taken)	Average Satisfaction Score per Patient*				
		#1	#2	#3	#4	#5
3	2	4.9	4.4			
9	3	5.0	5.0	5.0		
10	2	4.5	4.0			
12	1	4.9				
13	1	4.5				
14	4	5.0	5.0	5.0	4.7	
15	1	5.0				
16	4	4.5	5.0	5.0	4.9	
17	2	4.6	3.3			
18	5	4.5	4.8	4.6	4.8	4.6
19	4	4.9	4.5	4.8	4.7	
20	3	4.7	4.6	4.8		
21	3	4.9	4.8	4.8		
23	2	4.2	4.5			
25	4	4.8	4.7	4.7	4.6	
27	3	4.8	4.7	5.0		
28	4	4.9	5.0	4.6	4.7	
29	4	4.8	4.7	4.7	4.8	
30	3	4.7	4.7	4.8		
31	3	4.8	4.6	4.6		
32	4	4.8	5.0	5.0	4.5	
33	2	3.8	4.5			
34	1	4.7				
36	2	4.5	4.7			
37	3	4.8	4.7	4.6		
38	4	4.4	4.4	4.7	4.4	
39	4	4.8	4.8	4.8	4.8	
40	2	4.6	4.6			
Z1	1	4.8				
Z2	1	4.9				
Z3	1	5.0				
Z4	1	4.6				
Z5	1	4.6				
Z6	1	4.7				
Z7	1	4.8				
Z8	1	4.8				
Z9	1	4.6				
Z10	1	3.9				
Z11	1	4.6				
Z12	1	4.6				
Z13	1	4.8				
Z14	1	3.6				
Z15	1	3.9				
Z16	1	4.8				
TOTAL		44	24	17	10	1

* Scores per patient in chronological order

Table 9: Clients Scores/Times Survey Answered

Clients Scores/Times Survey Answered				
<i>Time 1</i>	<i>Time 2</i>	<i>Time 3</i>	<i>Time 4</i>	<i>Time 5</i>
5.0 – 4 clients	5.0 – 5 clients	5.0 – 5 clients	4.9 – 1 client	4.6 – 1 client
4.9 – 6 clients	4.8 – 3 clients	4.8 – 5 clients	4.8 – 3 clients	
4.8 – 12 clients	4.7 – 6 clients	4.7 – 3 clients	4.7 – 3 clients	
4.7 – 4 clients	4.6 – 3 clients	4.6 – 4 clients	4.6 – 1 client	
4.6 – 7 clients	4.5 – 3 clients		4.5 – 1 client	
4.5 – 5 clients	4.4 – 2 clients		4.4 – 1 client	
4.4 – 1 client	4.0 -1 client			
4.2 – 1 client	3.3 – 1 client			
3.9 – 2 clients				
3.8 – 1 client				
3.6 – 1 client				

Table 10: Question by Question Summaries/Average Scores: The patient satisfaction survey was divided in two parts. The first part of the survey had 10 questions and the second part, 12 questions.

Question 1 – part 1, “*Is this your first experience with telemedicine?*” revealed the followings: 30 clients answered “Yes”, and 52 answered “No”. There was a total of 6 non-responses.

Questions 5 and 7 – part 1, “*I was nervous or uncomfortable about using telemedicine prior to my visit*”, and “*I was worried that telemedicine might not protect the privacy of my medical records*” had the lowest scores: 3.4 on Part 1-Question 5 and 2.6 on Part 1-Question 7. In most cases, a psychiatric nurse practitioner and a counselor were present due to the high incidence of suicide ideation and attempts.

More specifically, there was a high satisfaction rate with a 4.4 mean response on part 1 of the survey and a 4.9 mean response on part 2.

Table 10: Question by Question Summaries/Average

Questionnaire Part	Question #	Average Response
1	1	30 Yes / 52 No
1	2	4.8
1	3	4.8
1	4	4.9
1	5	3.4
1	6	4.4
1	7	2.6
1	8	4.9
1	9	4.8
1	10	4.8
2	1	4.9
2	2	4.9
2	3	4.9
2	4	4.9
2	5	4.8
2	6	4.9
2	7	4.9
2	8	4.9
2	9	4.9
2	10	4.9
2	11	4.8
2	12	4.9

Patient Satisfaction Survey – Part 1

Patient Satisfaction Survey



Date: ____/____/____

Is this your first experience with telemedicine? Yes No

Instructions: Please read the statements below and indicate your level of agreement or disagreement by using numbers 5 through 1 in the box to the right.

- Strongly agree = 5
- Agree = 4
- Neutral / Not sure = 3
- Disagree = 2
- Strongly Disagree = 1

Evaluate Your Telemedicine Experience	Answer
I would rate the quality of telemedicine service I just received as excellent.	
The medical care I just received via telemedicine was just as good as the care I would have received if I traveled to UTMB Galveston.	
I had NO trouble hearing or seeing the physician during my telemedicine visit.	
I was nervous or uncomfortable about using telemedicine prior to my visit.	
After my visit, my anxieties have been relieved, and I now feel comfortable with telemedicine.	
I am worried that telemedicine might not protect the privacy of my medical records.	
The telemedicine service was more convenient for me than traveling to UTMB Galveston.	
I would recommend UTMB's telemedicine service to a friend or family member.	
I want to use UTMB's telemedicine service again in the future.	

We welcome any other feedback or comments about your telemedicine experience and how it could be improved upon.

Patient Satisfaction Survey – Part 2

Patient Satisfaction Survey



Date: ___/___/___

Instructions: Please read the statements below and indicate your level of agreement or disagreement by using numbers 5 through 1 in the box to the right.

- Strongly agree = 5
- Agree = 4
- Neutral / Not sure = 3
- Disagree = 2
- Strongly Disagree = 1

Evaluate Your Far-End Provider <small>(Physician, RN, NP, or PA with whom you communicated via telemedicine)</small>	Answer
My provider was very courteous and polite.	
My provider took my problems and concerns seriously.	
My provider paid a great deal of attention to me.	
My provider was concerned that I stayed well informed about my treatment.	
My provider was concerned for my privacy.	
My provider knew how to efficiently and effectively use the technologies involved with telemedicine.	

Evaluate Your Near-End Presenter <small>(Person responsible for facilitating the telemedicine visit from your end)</small>	Answer
My presenter was very courteous and polite.	
My presenter took my problems and concerns seriously.	
My presenter paid a great deal of attention to me.	
My presenter was concerned that I stayed well informed about my treatment.	
My presenter was concerned for my privacy.	
My presenter knew how to efficiently and effectively use the technologies involved with telemedicine.	

7. Educational and preventive activities will be developed and successfully implemented in the target communities.

There were five main initiatives that involved the educational and preventive activities in the target communities:

- (1) Direct training of staff involved with assessment of clients and through observation of psychiatric evaluation.
- (2) In-service on Major Depression and Post-Traumatic Stress Disorder and indicated treatment for staff of the Women's Shelter of East Texas.
- (3) In-services for school psychologists on child mental health concerns.
- (4) In-services for school parents group for Tourette's Disorder.
- (5) In-service for school staff on effects of trauma on youth and how to respond.

a. Presentations

Between November 2000 and November 2003, there were 22 presentations covering the subject of the TOP East Texas Mental Health Project (see Table 11).

Table 11: Presentations TOP East Texas Mental Health Project

Month/Year	Presenter(s)	Conference – Location	Title
November 2000	Speck, N.	Texas Homeless Commission, Annual Conference, Corpus Christi, TX	Session presenter: East TX Telemedicine Project
February 2001	Walker, G.	17 th Annual Conference on Prevention of Child Abuse, sponsored by Prevent Child Abuse, Houston, TX	“Effectiveness of a Tele-Mental Health Program with Victims of Domestic Violence ”
April 2001	Speck, N.	Mission Possible Conference, Nacogdoches, TX	Plenary speaker: Women and Domestic Violence: East TX Telemedicine Collaboration
June 2002	Speck, N.	American Telemedicine Association, Annual Meeting, Los Angeles, CA	Panel presenter: East Texas Telemedicine Collaborative: Domestic Violence
August 2002	Speck, N.	Eli Lilly Mental Health Advocate's Conference, Chicago, IL	Plenary speaker: President's New Freedom Mental Health Commission and the Role of Telemedicine in Increasing Access to Services
August 2002	Speck, N.	National Association of Rural Mental Health, Santa Fe, NM	Plenary speaker: Access Needs for Mental Health Telemedicine Services in Rural and Frontier America
September 2002	Speck, N.; Hartshorn J.	Texas County Judges and Commissioners Annual Meeting, Odessa, TX	Panel presenters: Mental Health/ Law Enforcement: Role of Telemedicine
September 2002	Speck, N.; Hartshorn J.	Texas Rural Health Annual Meeting, Lubbock, TX	Session presenters: Telemedicine Partnerships: Domestic Violence Interventions
September 2002	Speck, N.; Hartshorn J.	Regional Board of Directors Meeting, Lufkin, TX	Guest speakers: The TOP Grant Domestic Violence Program
October 2002	Speck, N.	Eli Lilly sponsored Minority Leadership Conference, San Antonio, TX	Panel presenter: Rural Health Needs and Telemedicine
November 2002	Speck, N.	Chamber of Commerce Leadership Day at SFA State University, Nacogdoches, TX	Programs of Excellence: Telemedicine TOP grant
November 2002	Speck, N.	President's New Freedom Commission on Mental Health: Member of Commission and Listening Session Discussant, Portland, OR	Telemedicine in the Western United States
January 2003	Speck, N.	Telemedicine Issues on Reimbursement: Invitational with Sen. Kay Bailey Hutchison, Dallas, TX and Washington, DC	TOP program example

Table 11: Presentations TOP East Texas Mental Health Project (continued)

Month/Year	Presenter(s)	Conference – Location	Title
January 2003	Speck, N.	The University of Michigan Center for Depression, Ann Arbor, MI	Invited lecturer: The TOP Grant Partnerships for Domestic Violence Intervention in A Rural Setting
February 2003	Speck, N.	The Mental Health Corporation of America Winter Meeting, Orlando, FL	Plenary speaker: Role of Telemedicine in Mental Health Services
February 2003	Speck, N.	SAMHSA Rural Policy Summit, Bethesda, MD	Invited participant: Need for Rural Technical Assistance Centers: Telemedicine
March 2003	Speck, N.	National Council for Community Behavioral Healthcare Annual Training Conference, Denver, CO	Plenary speaker and session co-presenter: Telemedicine in a Rural Community Mental Health Clinic
April, 2003	Thomas, C.	American Telemedicine Association, 8 th Annual Meeting, Orlando, FL	Telepsychiatry in a Rural Women's Shelter
May, 2003	Harper, A.; Thomas, C.; Matorin, A.; McGregor, J.	American Psychiatric Association, 156 th Annual Meeting, San Francisco, CA	Expanding Telepsychiatry Beyond Patient Care: Opportunities and Challenges.
June 2003	Speck, N.	President's New Freedom Mental Health Commission Final Report, Washington, DC	Co-authored goal six on telemedicine recommendation
August 2003	Walker, G., Tschirch, P., Moore, L. C., and Migl, K.	Texas Growth, Rural Roots Conference, sponsored by the Texas Rural Health Association, Austin, TX	"Effectiveness of a Tele-Mental Health Program with Victims of Domestic Violence"
November 2003	Moore, L. C.; Walker G.	37 th Biennial Convention of Sigma Theta Tau International Honor Society of Nursing, Toronto, Canada	"Effectiveness of a Tele-Mental Health Program with Victims of Domestic Violence"

8. Increased knowledge/awareness among teachers and school nurses regarding prevention and identification of treatable disruptive behaviors in students.

Synergies were created with the Office for the Advancement for Telehealth by developing concurrent workshops related to child abuse and attention deficit disorders for parents, teachers, and school nurses at both Martinsville and Woden Independent School Districts.

Dr. Thomas encouraged teachers and school nurses to communicate with him for consultation or specific student behavioral problems.

9. Increased knowledge and awareness among health care and public safety personnel of signs of potential domestic abuse in women and children.

Project leaders were stunned to learn that while many of the women had prior psychiatric treatment (26 or 67% of all those referred for evaluation), none of the prior treatment records indicated domestic violence as a focus of treatment.

Dr Thomas now emphasizes the importance of screening for domestic violence with his training of medical students and residents.

It was also very clear that child abuse was a common factor in history of these victims of domestic violence with 26 of the referred clients or 67% being abused as children. Dr. Thomas now emphasizes the long-term impact of child abuse and need to be alert for these residual damages in designing treatment regimens. In all his teaching activities SFASU faculty members now incorporate telemedicine experiences and knowledge in their lectures and field experiences.

10. Decreased recidivism rate for domestic violence among women receiving services through the women's shelter and RMCH clinic.

The TOP program served 38 clients. A random sample of clients from the Women's Shelter revealed that, before the TOPS program, the rate of recidivism was 26.31%. After the program the rate dropped to 5.26% for those enrolled in the project.

Only one of the evaluated clients returned to shelter during the 19 months of the program, and only one client dropped out of the shelter to return to the abusive relationship during her initial treatment.

11. Increased appropriate and successful referrals to the Texas Crime Victims' Compensation Fund among women at the Women's Shelter and the RMCH.

The WSET staff assists all clients who qualify with the paperwork necessary to apply to the Texas Crime Victims' Compensation Fund. The WSET has no way to track whether or not these women receive any money from the fund after the clients leave the shelter.

12. Increased number of agencies and individuals referring women to shelter for services and an increase in number of student volunteers in shelter or schools.

Since the Telemedicine Program was implemented, agency referrals for services increased.

Referrals came from:

- Spanish Information Center
- Peavy Switch Recovery Center
- Buckner Family Place
- Nacogdoches Independent School District
- Texas Workforce Center
- Texas Department of Human Services
- Health Horizons
- Adult Protective Services
- Heartbeat Pregnancy Center

We have also been able to work with private funding sources such as Temple Inland, which funded the renovation of a church as a transitional housing facility for the WSET. In addition, the number of volunteers, including psychology students, who do their internship at the WSET, has increased.

The Telemedicine unit was located in the counselor's office during the course of the grant. That location made it easy for the different agencies to view the equipment.

These agencies include:

- Texas Council on Family Violence
- Texas Association Against Sexual Assault
- Nacogdoches County Chamber of Commerce
- Nacogdoches Treatment Center
- The Daily Sentinel Newspaper
- Child Protective Services from surrounding counties
- KJCS Radio Station
- Community RX
- Brentwood Hospital
- District Clerk
- Nacogdoches Mayor
- Nacogdoches County Attorney and District Attorney
- Assistant Chief of Police for Nacogdoches and the Sheriff of Nacogdoches County

During the course of the grant 12 psychology students, graduate and undergraduate, were active at the Women's Shelter of East Texas. Students were involved in a number of activities including assistance at the safe house, facilitating and assisting with children's groups at the safe house, and data collection.

The total number of hours of student activity was more than 1,350 hours. Ten of the 12 students received formal course credit for their work. Four students provided a total of 480 hours of general assistance at the safe house. Two students provided a total of 300 hours of children's group therapy in more than 75 different children's groups. Six students provided 460 hours of data entry and verification for more than 700 clients who came to the safe house for the 3 year period.

Social work students from SFASU were involved with at-risk students at the junior and senior high school level for two semesters. Two students conducted a weekly group at the junior high school for approximately 12 weeks and worked with girls identified by the school counselors to address issues of: self-esteem, decision making, goal setting, family interactions, peer pressure, healthy choices, and other topics aimed at helping the students remain in school and live productive lives. Each group consisted of 6 to 7 girls. Two students worked with 15 to 20 students at the high school on an individual basis providing crisis intervention and one-on-one counseling.

Table 12: Women's Shelter of East Texas – Consolidated Volunteer Report shows that the average number of hours per volunteer was 2.88 per month from March 2002 to March 2003.

Table 12: Women's Shelter of East Texas – Consolidated Volunteer Report

Month/Year	Number of Volunteers	Volunteer Hours	Hours per Volunteer
March 2002	720	2246.75	3.12
April 2002	591	2198.25	3.71
May 2002	613	1854.50	3.02
June 2002	679	2213.75	3.26
July 2002	515	1602.25	3.11
August 2002	699	2160.50	3.09
September 2002	682	2210.75	3.24
October 2002	736	2477.00	3.36
November 2002	1423	2849.50	2.00
December 2002	1514	2511.50	1.65
January 2003	954	2441.00	2.55
February 2003	913	2349.75	2.57
March 2003	1004	2847.50	2.83

13. Increase in number of parents and organizational representatives at workshops and conferences on domestic violence.

During the grant time-frame, the staff of the Women's Shelter conducted 317 presentations to various agencies and groups throughout nine-county service areas. The staff did 50 more presentations than in the year before the grant period.

Staff from the WSET participated in three workshops. Dr Christopher Thomas, Professor with the UTMB Department of Psychiatry and Behavioral Sciences, conducted the first one on

December 12, 2002. Dr. Thomas provided a short course on mental health diagnosis and treatment.

The second workshop on January 24, 2003 dealt with preparing a battered woman for court appearances.

The third workshop held on February 2, 2003, discussed violence against women in the perinatal period. It was presented by Sue Bishop, RNC and WSET advocate.

Table 13: Workshops List

Workshop Title	Date	Presenter	Number of Attendees
Mental Health Training Seminar	12/12/2002	Dr. Thomas	21
Preparing a Battered Woman for Court	1/24/2003		17
Violence Against Women in the Perinatal Period	2/2/2003	S. Bishop	20

CONCLUSION

Women at the WSET received mental health evaluation and treatment during their stay at the shelter. Prior to the TOP project, there was no mental health treatment or evaluation at the shelter. This project demonstrated the feasibility of using telepsychiatry to treat acutely and severely ill individuals. 32 of the referred clients had a history of suicidal ideation or attempts, and most had recent symptoms of psychiatric problems. The project also demonstrated the ability to use telemedicine to address a specific obstacle in the provision of evaluation and treatment by working within local systems of care.

The project's most significant accomplishment was providing victims of domestic violence with mental health needs access to treatment. Prior the implementation of the project, services were non-existent to the resident and non-resident clients served by the Women's Shelter in the nine-county service area. The likelihood of any of these clients receiving services, without enduring an 18- to 24-month wait, was very low. These grant resources provided the needed mental health services in a much more timely manner. In addition, approximately 20% of the clients did not have met the criteria for priority populations and therefore would not have been eligible for services from the Burke Center. The women, who had prior psychiatric treatment and were diagnosed through the project with PTSD, had no idea that their symptoms were attributable to their trauma as survivors of domestic violence. The psycho-education and other nursing interventions that were aimed at normalizing the experience of these clients were significant contributors to their satisfaction with the care they received.

The project provided clinical learning experiences for the nurse practitioners on the faculty at SFA that otherwise would have been difficult to come by. The hours of practice in the telemedicine clinic were hours of advanced nursing practice that nursing faculty who teach in undergraduate programs cannot earn during their hours on the job. Nursing faculty who teach in undergraduate programs have difficulty maintaining advance practice licensure and certification if they choose to continue to teach. Projects like this one help faculty with advanced practice credentials stay in education while continuing to get the practice experience they need to retain those credentials.

Evaluation using the SCL-90-R revealed that the women in the shelter had a range of psychiatric symptoms comparable to those in psychiatric outpatient clinic.

The project established Medicaid eligibility for some of the shelter clients, which contributed to the sustainability of the program.

The recidivism rate for clients in the study decreased significantly compared with that of clients in the pre-project period.

The project provided a unique service to the clients of Women's Shelter of East Texas. Meeting the mental health needs of these clients provided an opportunity for them to escape a cycle of violence and improve their ability to function more successfully in all arenas: home, parenting, employment, and interpersonal relationships. A community is made up of individuals, so when the health of one individual is improved, the health of the community improves.

SUMMARY AND FUTURE DIRECTIONS

This project has made a significant contribution to the care of women, victimized by domestic violence. There were some barriers which had to be overcome, including changes in personnel on the project. Working with multiple agencies and multiple professionals also presented unique challenges. However, all of the barriers were overcome and led to a successful conclusion of the project.

Based upon the results of this project, several other women's shelters around the country have considered the use of a similar model for care. The project staff continues to evaluate ways of continuing the work started by the project. With what was learned through the project, the personnel at the women's shelter have gained skills in assessing women's mental health needs and are now better able to make appropriate referrals. The staff is also considering subsequent grant applications to expand the work of the grant, particularly to increase the involvement in schools. Importantly, the project partners continue to work together and to find ways to provide these and other services to the residents of the East Texas area.