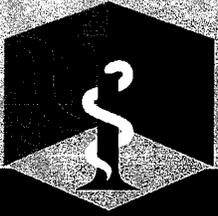


The Virtual Reality Medical Center PTSD Treatment Program

*Mark D. Wiederhold, M.D., Ph.D., FACP
President
mwiederhold@vrphobia.com
(858) 642-0267*

..... *San Diego* *Los Angeles* *Brussels* *Orlando*



CORPORATE OVERVIEW

- Incorporated in 2001 (S Corp) Professional Medical Corp
- Headquarters located in San Diego, CA
- Additional offices located in Los Angeles, Brussels, and Philadelphia
- Over 50 government and private clients
 - DoD
 - VA
 - NATO countries



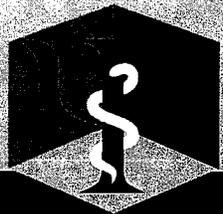
San Diego



Los Angeles



Brussels



CORPORATE OVERVIEW

VRMC consistently delivers best-value, lowest risk, on-time solutions to the U.S. Navy, U.S. Army, U.S. Marine Corps, and the U.S. Department of Veterans Affairs. We are committed to the comprehensive treatment of our Wounded Warriors with the most advanced and successful technologies and clinical protocols.



San Diego



Los Angeles



Brussels

VRMC Continuum of Care

Providing turn-key training and treatment for the troops

Pre-Deployment

SIT

Stress Inoculation Training

Combat Medical Training
Injury Creation Science

PTSD Prevention

Suicide Prevention

In Theater

PTSD Prevention

PTSD Treatment

Acute Stress Disorder
Treatment

Combat Medical Training

Post-Deployment

PTSD Treatment

Pain Management
Virtual Reality

Physical Rehabilitation
Mixed Reality

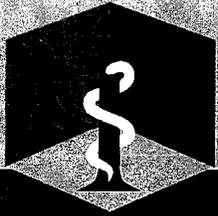
Cognitive Rehabilitation
Mixed Reality



VRMC

The Virtus Reedy Medical Center
6100 Catherine Court East, Suite 210
San Diego, CA 92121

252-642-0107
mailto:info@vrvc.com
www.vrvc.com



QUALIFICATIONS

- Delivery of turnkey PTSD systems and APA-approved therapist training programs to over 20 locations in U.S./Europe
- Sole source contract for VISN 23 VA Hospitals
- ISO 9001:2000 and ISO 13485:2003 medical device level certified manufacturing and testing facilities
- Listed in the Central Contractor Registry (CCR)
- Current DCAA approved accounting system
- Successfully bid and won over 50 competitive government contracts
- Certified by the Department of the Navy Human Research Protection Protocol approved by the Navy Surgeon General
- Certified Veterans Affairs Hospital vendor
- NATO approved contract vendor



CLINICAL TRAINING & EDUCATION

- VRMC's 501c3 non-profit affiliate, the Interactive Media Institute (IMI), is certified by the American Psychological Association (APA) to provide Continuing Education (CE) credits for VR therapy.
- Workshops and training courses for the past 12 years
- Training programs for interns, fellows, post docs, medical students, master's students in psychology, and students of biofeedback and physiological regulation
- NATO-sponsored symposium on Wounds of War: Suicide
 - Additional funding from Austrian MOD and US Army MRMC
 - 19 nations in attendance
- NATO-sponsored symposium on Wounds of War: PTSD
 - Additional funding from Croatian MOD and US Army MRMC



PARTNERS & PROGRAMS



- *Human Identification at a Distance*
- *Cultural Influences on Virtual Reality Environment Response Behavior*
- *Student State*



- *ARO Adaptive Displays Conference at AMC SIGGRAPH 2004*



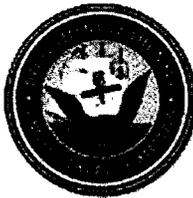
- *Combat Medic*
- *Injury Creation Science*
- *SIT for AeroMeds*
- *PTSD in Iraq*
- *PTSD Coalition Forces*



- *VR for Pain Distraction during Dental Procedures*
- *VR for Burn Pain Distraction*
- *VR for Chronic Pain*
- *VR and physiological Monitoring for pain*
- *Cyber Therapy Conference*



- *CDC VR Driving Simulator for Training and Evaluating Driver Behavior*



- *Mobile Medical Monitor*
- *CAP Program*



Relevant Research and Results... Yesterday, Today, and Tomorrow

- *SIT*
- *PTSD*
- *Rehabilitation*



- *TBI Cognitive Rehabilitation*



QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.

- *Science for Peace and Security*
- *North Atlantic Treaty Organization*



- *BioWatch*

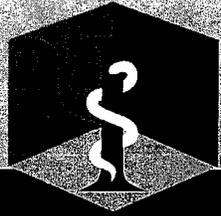


- *ICS Severe Trauma Training*



National Science Foundation
WHERE DISCOVERIES BEGIN

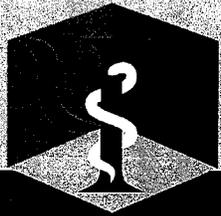
- *Mixed Reality Rehabilitation System*



DEPLOYED PTSD SYSTEMS

VRMC PTSD systems are currently being used at VA hospitals and medical institutions throughout the country

Our systems are also currently deployed in Iraq, Poland, and Croatia



MILITARY PTSD STUDIES

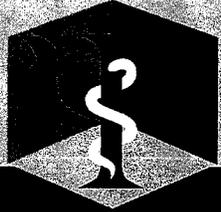
- 3-year funded ONR initiative:
 - PI: Brenda K. Wiederhold, Ph.D., MBA, BCIA
 - SI: Robert N. McLay, M.D.
 - Psychologist: Dennis P. Wood, Ph.D., ABPP
 - Medical Officer: Mark D. Wiederhold, M.D., Ph.D., FACP
 - Conduct focus groups
 - Design & develop VR software to treat troops returning from OIF/OEF
 - Produce a turnkey system (hardware & software)
 - Develop clinical protocols & therapist training manuals

- Pilot study completed
 - Overall 80% success rate

- 1st randomized controlled clinical trial utilizing VR to treat military PTSD
 - Completed by VRMC in 2009

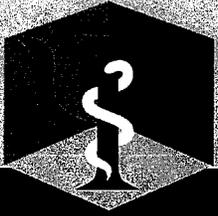
- Ongoing multi-center VA hospital clinical services programs at VISN 23



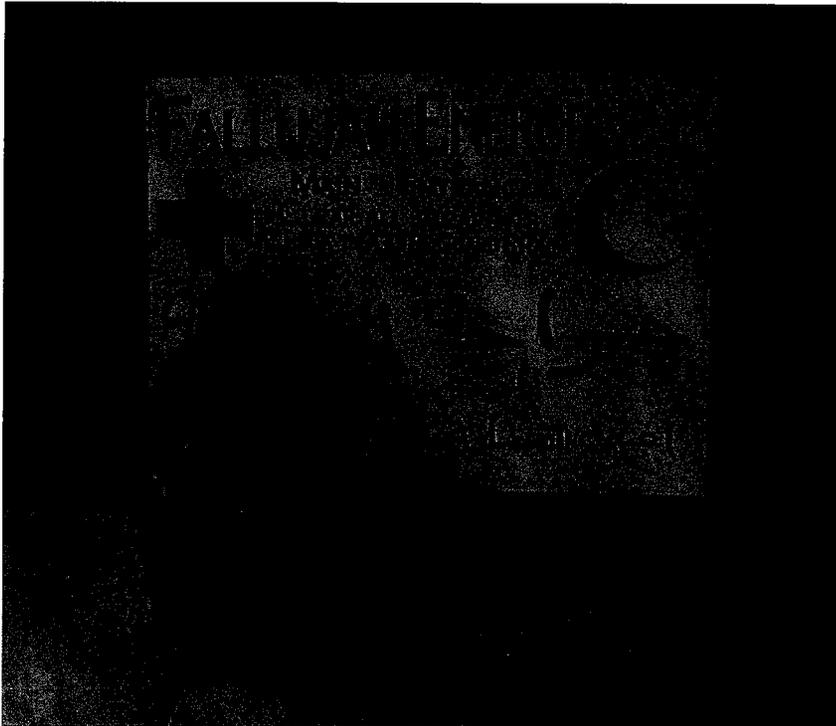


TREATMENT OUTCOMES

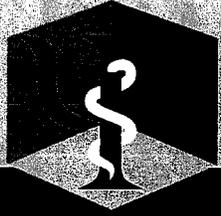
- 80% had statistically significant reduction in PTSD
- 100% had a reduction in anxiety and depression
- Treatment completers returned to active duty or civilian employment
- 80 active duty members with PTSD treated
 - (> 800 VR sessions)
- 700 civilian patients treated in VRMC clinics
 - 94% success rate for anxiety patients
 - 88% success rate for PTSD motor vehicle accident patients



DEPLOYED PTSD SYSTEMS

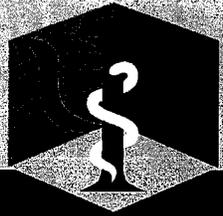


➤ 86% success rate



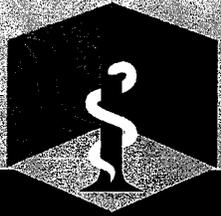
TREATMENT OPPORTUNITIES

- 400,000 soldiers in need of PTSD treatment
- VR-enhanced therapy: estimated to cost \$4,000/pt. (PhD level)
- Short-term cost: comparable or slightly less than treatment as usual
- VR however has a *higher* success rate and *dramatically reduced* relapse rate
- Treating PTSD now results in a substantial decrease in long-term costs due to chronic care needs, reduced productivity, and suicide
- Rand Report: providing NO treatment could exceed 6 billion dollars
- Treating our troops now could provide a cost savings of between 3 and 5 billion dollars



PTSD MOBILE SYSTEM

- Initial pilot study in New Mexico
- One PTSD mobile system
- Train social workers in VR based PTSD exposure therapy
- Consider 10 patients
- Consider 2 therapists
- Plan on 200 individual patient sessions



PTSD MOBILE SYSTEM COST

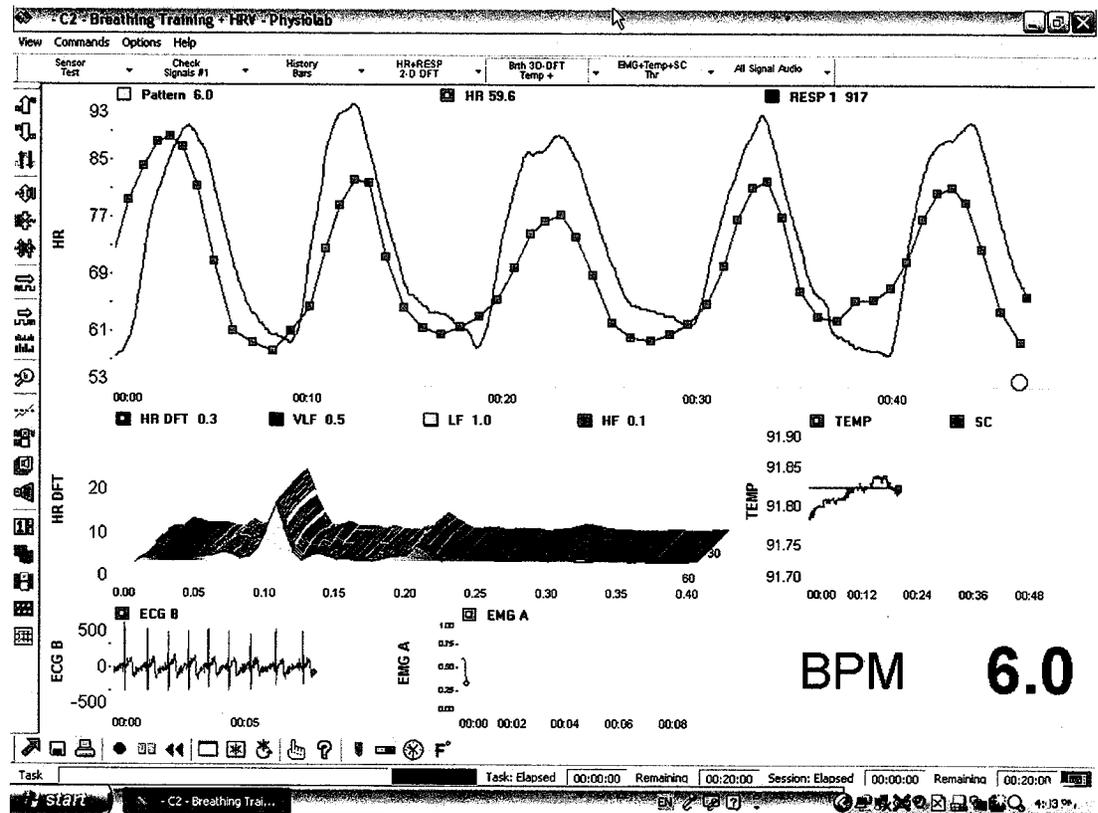
- PTSD mobile system: \$126,000
- Training (2 weeks): \$23,500
- Travel: \$9,700
- Therapist: \$12,000
- Support Staff: \$15,000
- Total: \$186,200
- Deliverables
 - Turnkey solution
 - Trained NM providers
 - 10 patients treated
 - License and maintenance
 - Clinical reporting and pubs





PTSD TELEMEDICINE

- Initial pilot study
- 10 patients
- 2 therapists
- 200 sessions
- 1 remote site

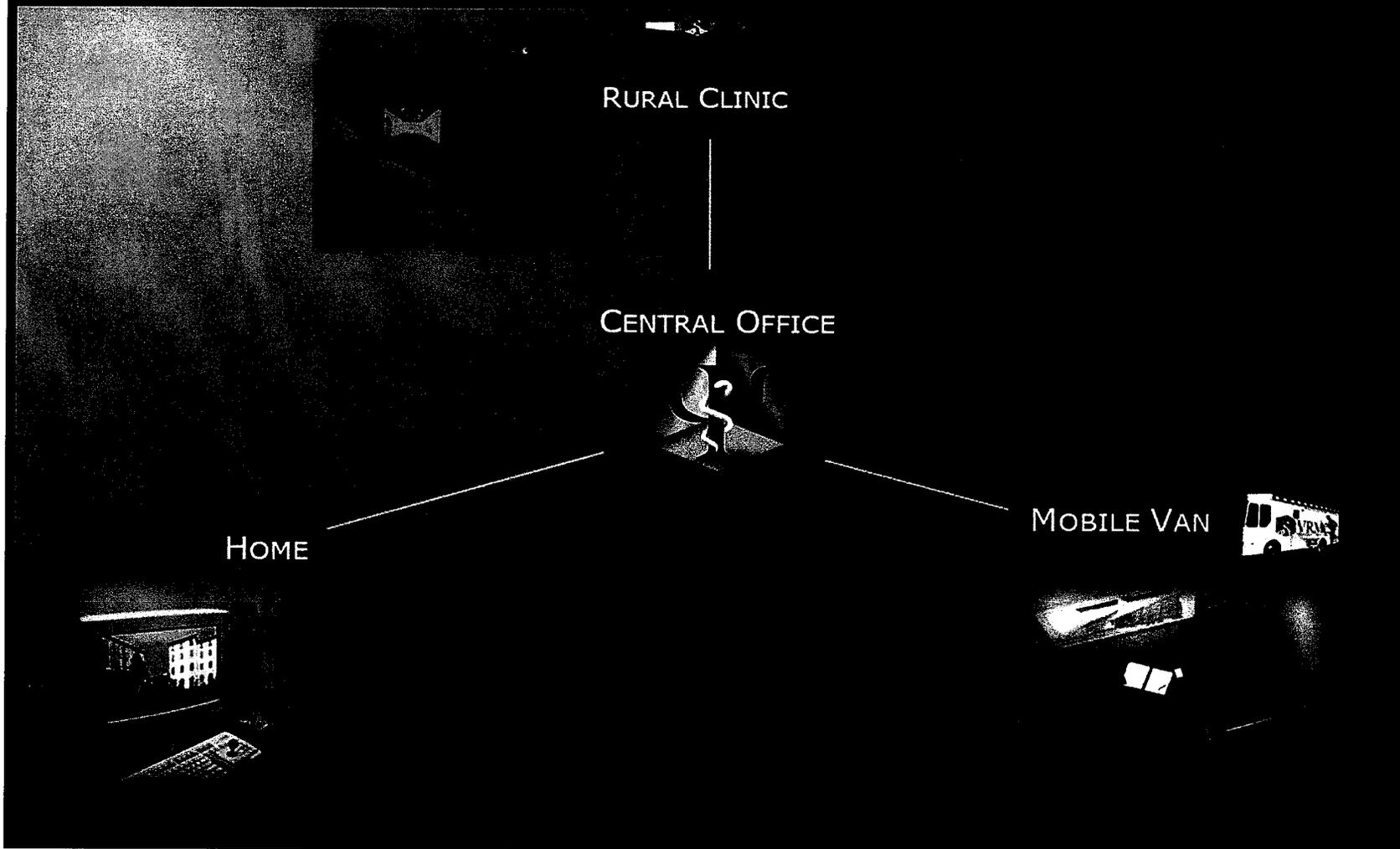


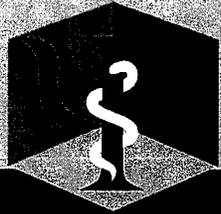


PTSD OUTREACH

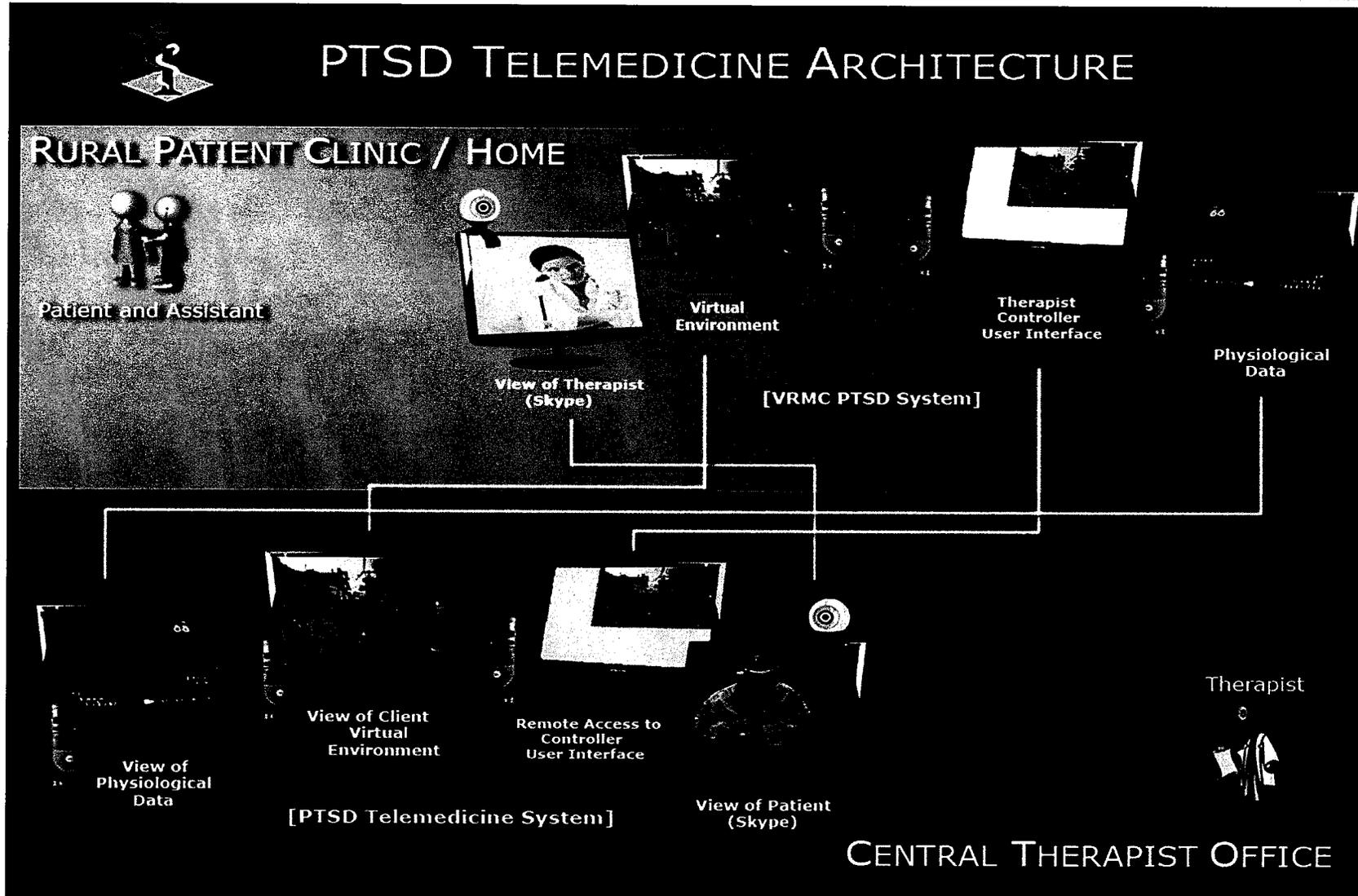


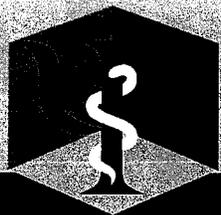
PTSD TELEMEDICINE OVERALL



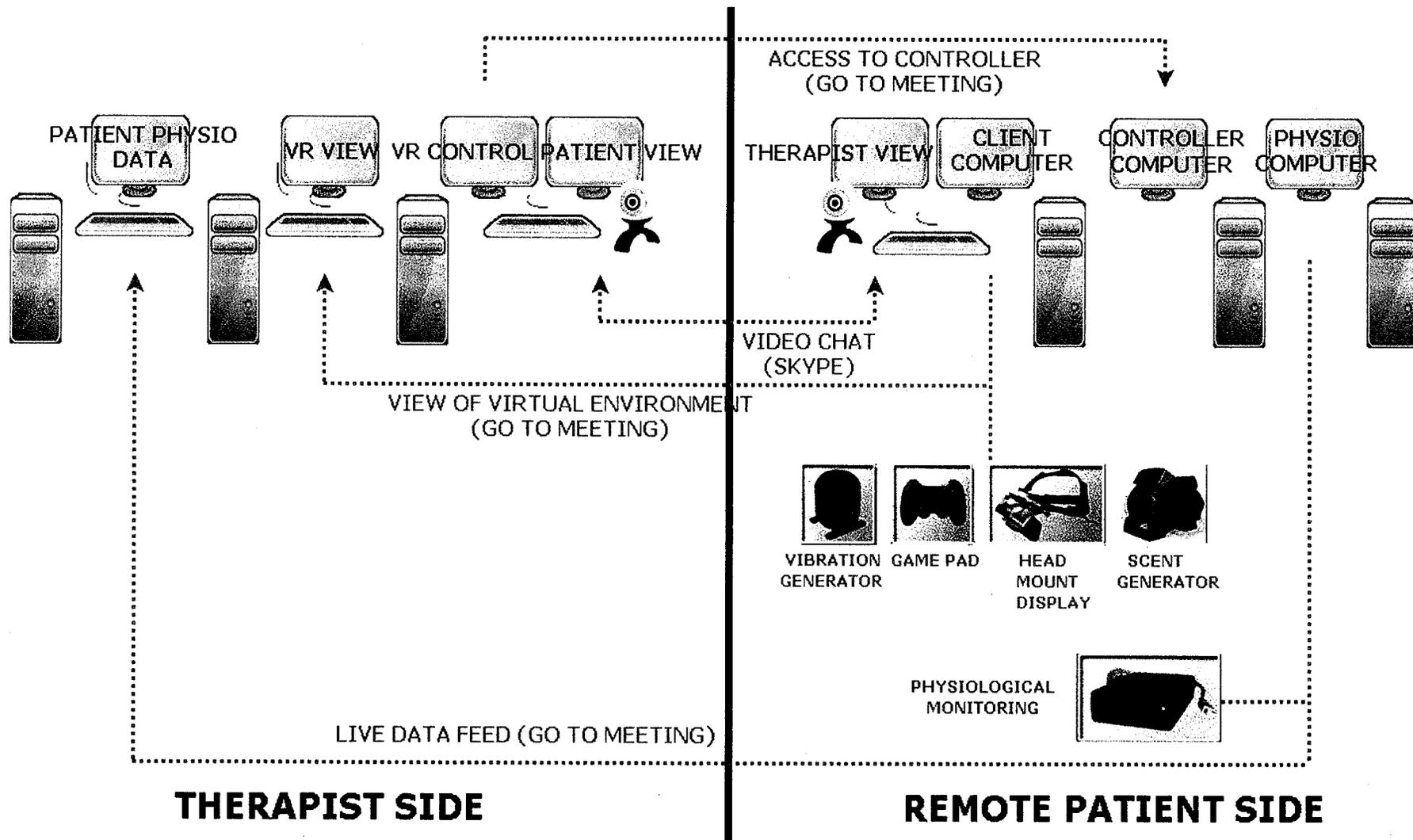


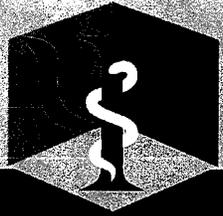
PTSD TELEMEDICINE SETUP





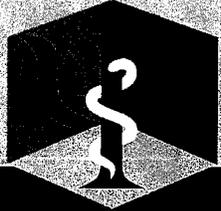
TELEMEDICINE ARCHITECTURE





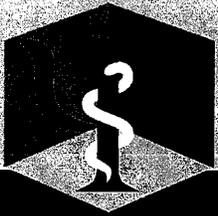
PTSD TELEMEDICINE COST

- PTSD system (\$126,000)
- Telemedicine system: \$10,000
- Training (1 week): \$10,500
- Travel: \$4,200
- Therapist: \$10,500
- Support Staff: \$9,500
- Network: \$6,000
- Total: \$50,700

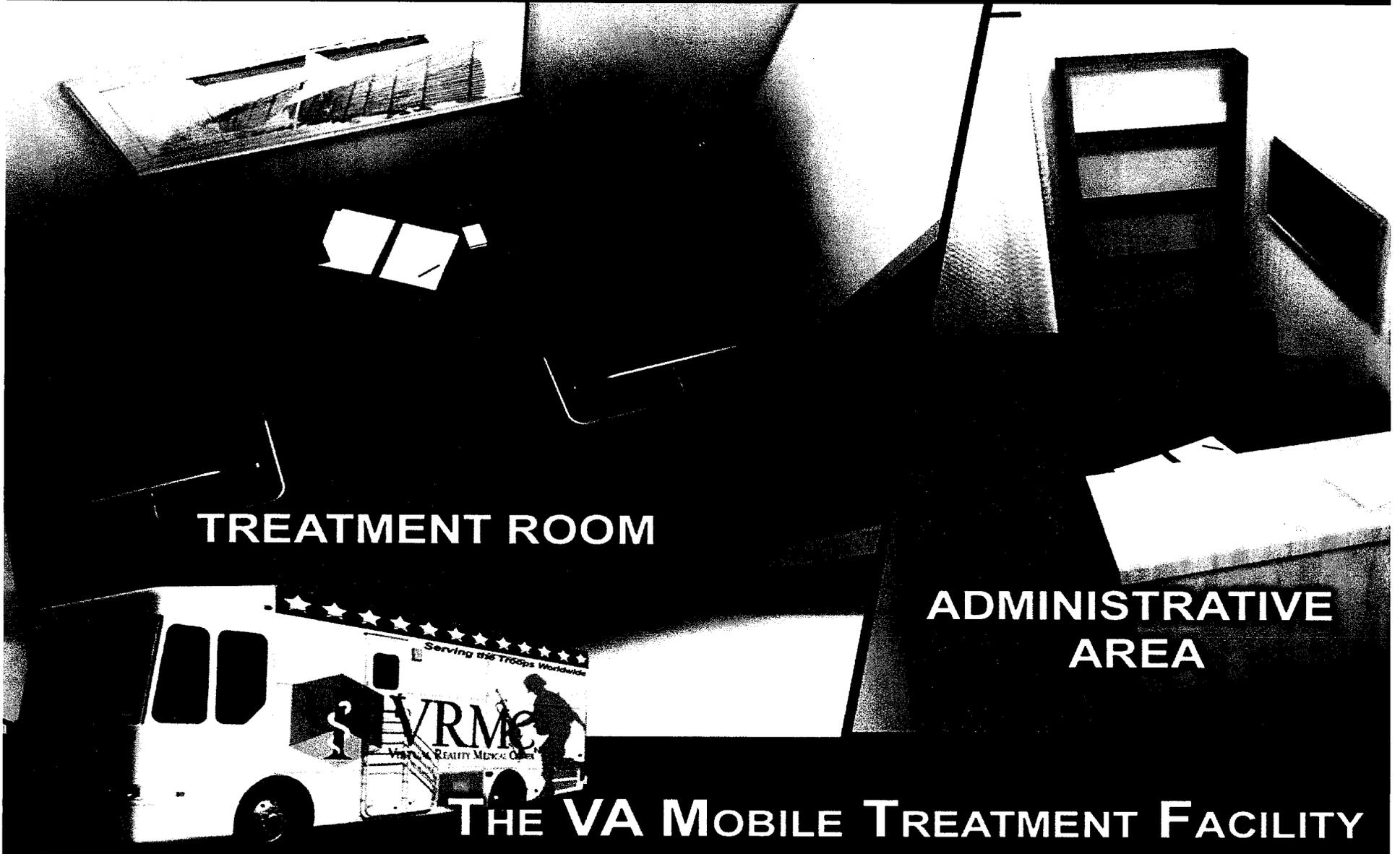


PTSD MOBILE VAN

- Initial pilot study focused in rural area
- One PTSD mobile system
- One PTSD telemedicine system
- One customized telemedicine van
- Consider 10 patients
- Consider 2 therapists.
- Plan on 200 individual patient sessions



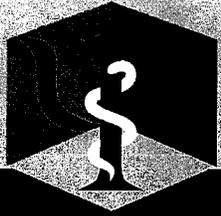
PTSD MOBILE VAN SETUP



TREATMENT ROOM

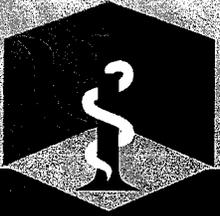
**ADMINISTRATIVE
AREA**

THE VA MOBILE TREATMENT FACILITY



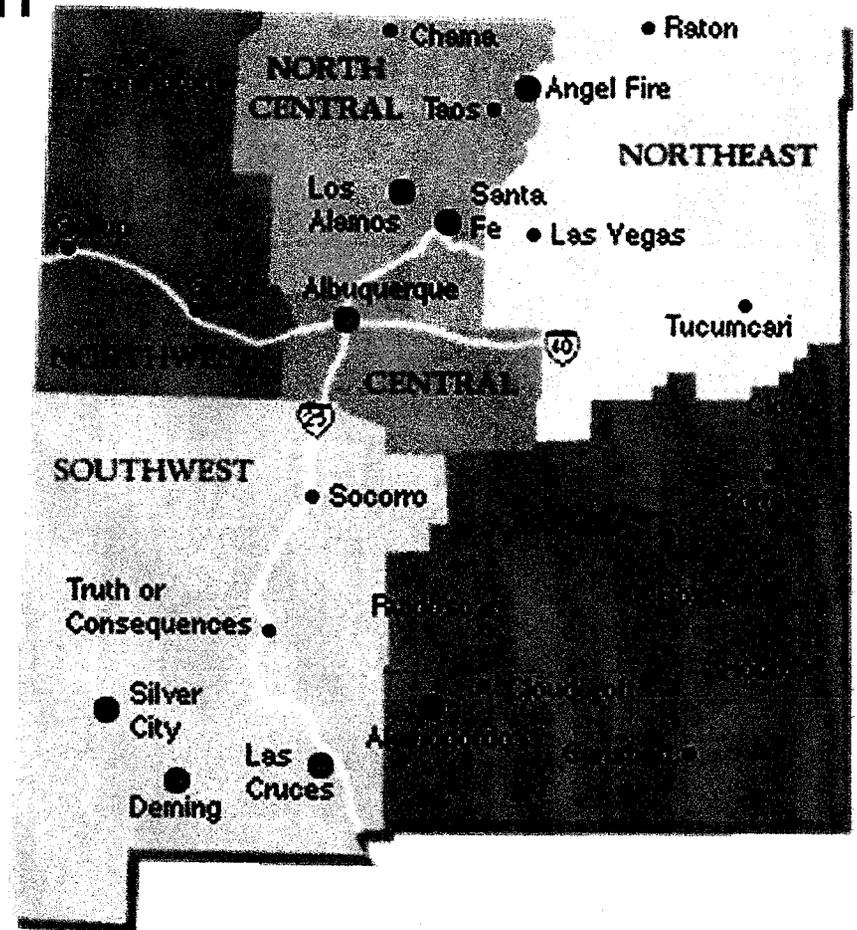
PTSD MOBILE VAN COST

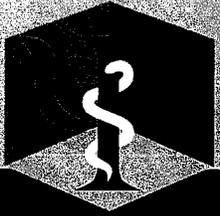
- PTSD system \$126,000
- Telemedicine system: \$10,000
- Customized telemedicine van: \$150,000
- Training (1 week): (\$10,500)
- Travel: (\$4,200)
- Therapist: \$10,500
- Support Staff: \$9,500
- Network: \$6,000 + recurring cost
- Total: \$312,000



PTSD MULTI-SITE ROLLOUT

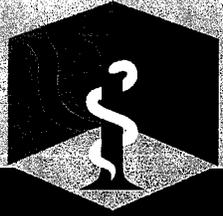
- Adopt PTSD Telemedicine Program for 10 sites
- \$200,000 per site
- Approximate cost of \$2.0 million





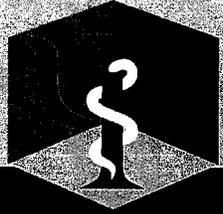
PTSD HOME CARE

- Current research focuses on migrating PTSD treatment to mobile platforms and handheld devices
- Develop a research program that works with existing home healthcare services
- May be used in conjunction with existing delivery model



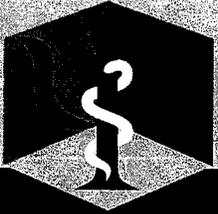
INTEGRATED PTSD AND TBI TREATMENT

- Over 50% of patients with PTSD meet criteria for mild to moderate TBI
- Some TBI patients must be treated for PTSD initially
- Integrated program pilot planned in Texas
- Both programs based on CBT model
- Integrated programs meet the complex needs of these patients



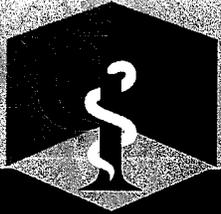
TELEMEDICINE PILOT IN SAN DIEGO

- Treat ten patients with PTSD
- Use existing protocols
- Work with local veterans group and Reserve Officers Organization
- Use off the shelf networking tools
- Use accelerated treatment protocol (8-10 weeks)



TEXAS PTSD TREATMENT PROGRAM

- Phase 1: Treat 100 patients with PTSD
- VR graded exposure and skills training
- Licensed social workers and/or LPC for treatment
- Lone Star clinics (full service primary care and mental health support)
- Model for expansion to other areas in Texas



PTSD PILOT OPTIONS

PTSD VR Pilot

- 10 patients
- Mobile therapy unit
- Trained NM providers
- Clinical reporting
- \$185,000

Telemedicine Pilot

- 10 patients + telemedicine
- \$30,000 + provider costs

PTSD Mobile Van

- 10 patients + van + mobile unit
- \$312,000

PTSD Multi-site Rollout

- Any number of sites
- \$1.5K - \$200K per site

PTSD Home Health Care

- Integrate with other mobile platforms
- Merge into existing home healthcare
- Cost: TBD