

# INNOVATIVE CLINICAL APPROACHES

## Treating Mental Health Crises with Biofeedback

**Yousef Turshani MD**  
**Chief Medical Officer**



SAN MATEO COUNTY HEALTH  
**SAN MATEO  
MEDICAL CENTER**



# OUR VISION & MISSION

Every patient will live their healthiest life.

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*We partner with our community to provide excellent healthcare for patients, including those experiencing social, environmental, or economic challenges.*

# WE ARE THE SAFETY NET

- The only public hospital and clinic system in San Mateo County (some counties don't have public hospitals)
- We are a small community hospital with a large ambulatory system
- Most patients have health coverage through the County, state, or federal government

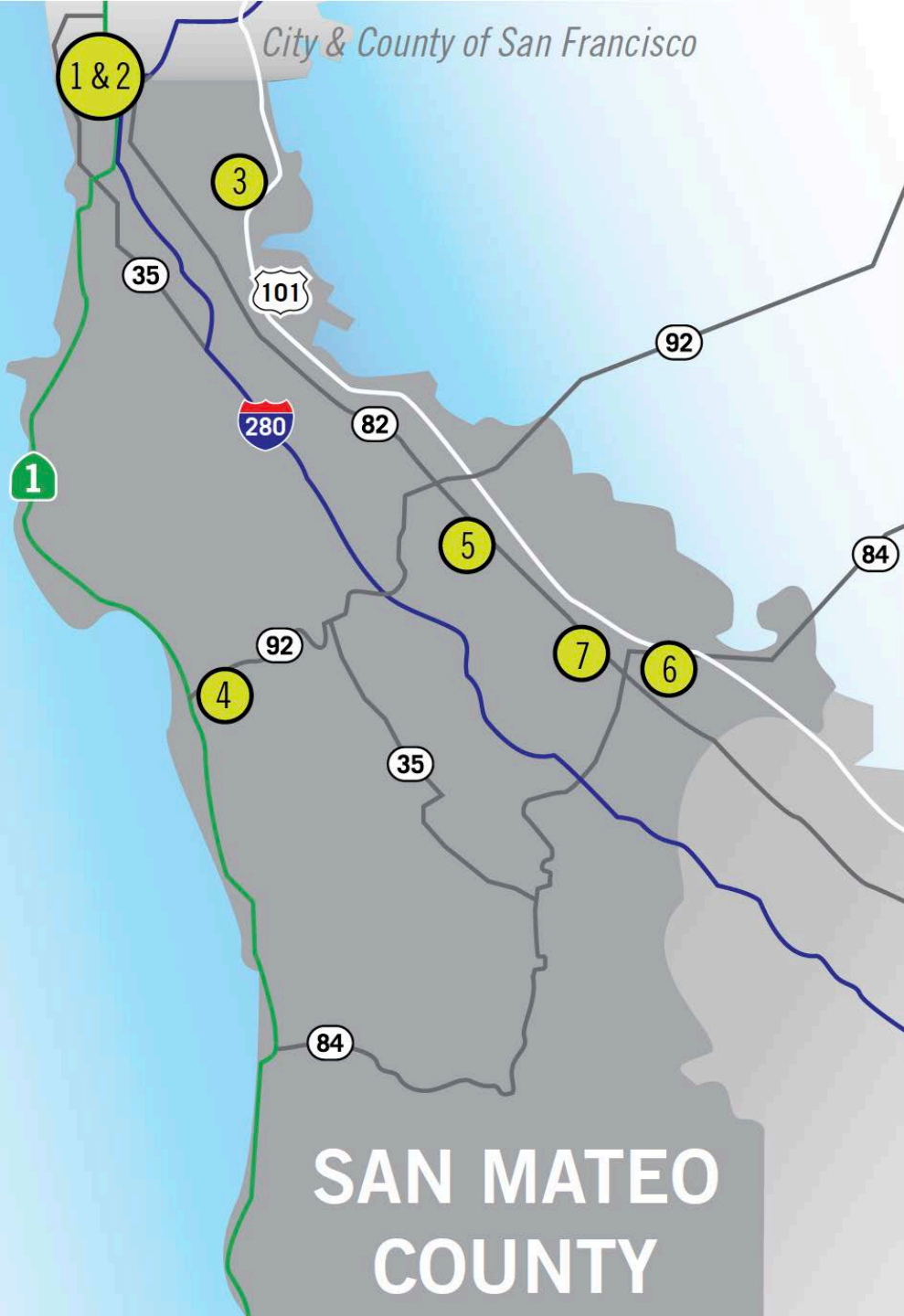


MEDICAL  
HOME FOR  
**61,000**  
PATIENTS



**21**  
CLINICS  
**7**  
LOCATIONS

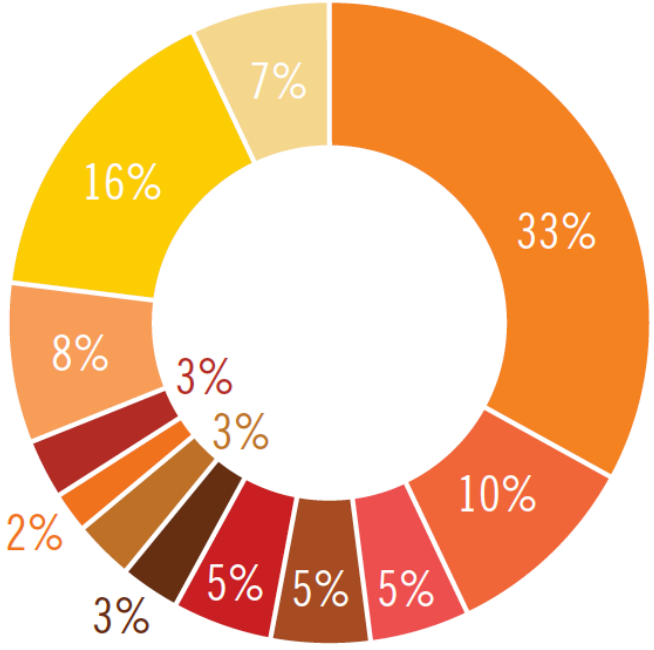
City & County of San Francisco



- 1 Daly City Health Center
- 2 Daly City Youth Health Center
- 3 South San Francisco Clinic
- 4 Coastside Clinic
- 5 San Mateo Clinics
- 6 Sequoia Teen Wellness Center
- 7 Fair Oaks Health Center



# ETHNICITY

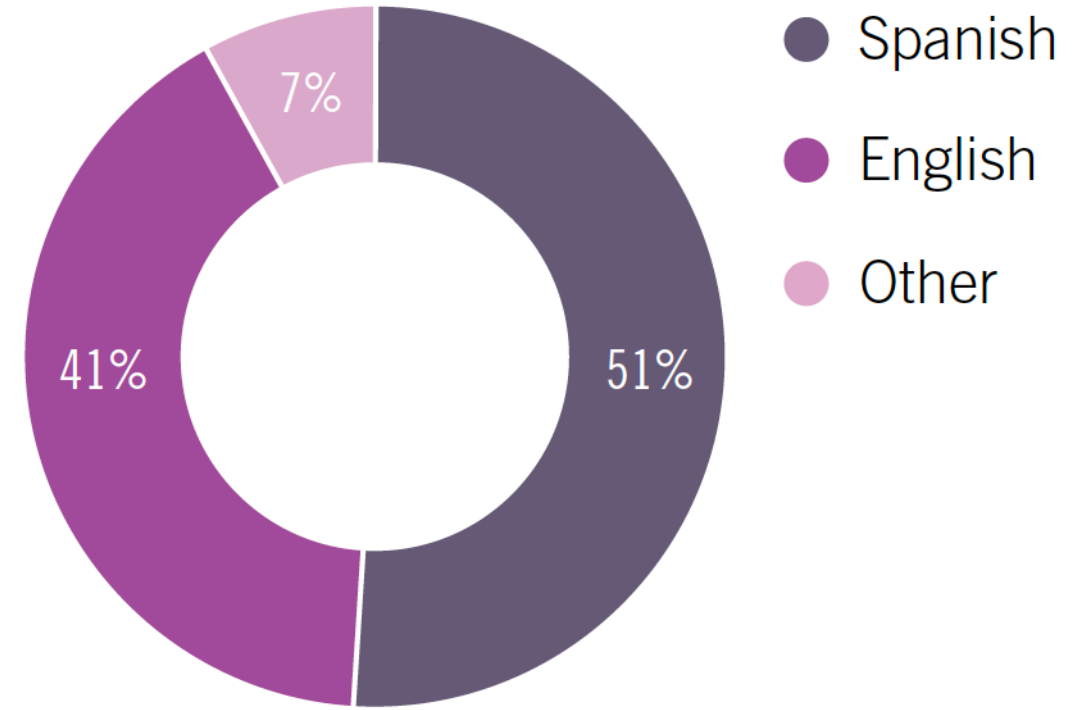


- Mexican
- Central American
- Latin American
- Filipino
- Guatemalan
- Salvadorian
- Chinese
- African American
- Other White
- Other/Mixed
- Other Ethnicity
- Unknown or blank

Ethnicity refers to how society groups people based on a shared heritage.



# LANGUAGE



We provide care in the preferred language of each patient.

# DEPARTMENT OF PSYCHIATRY

- Psychiatric Emergency Services
- Acute Inpatient Services
- Consult Liaison Services
- Integrated Behavioral Health (IBH)



# INTEGRATED BEHAVIORAL HEALTH

- Provides integrated medical and behavioral care in the primary care setting.
- Promotes access, equitable treatment, and whole-person care
- Reduces stigma associated with mental health treatment



# MEET MARIA

- 42 years old from Michoacan, Mexico
- History of severe trauma
- 3 – 4 visits to Emergency Room every year for 7 years with high blood pressure and headaches
- Reported neck and shoulder pain, chest tightness, feeling tired, and other physical symptoms known to be stress-related
- Primary care provider referred to IBH for evaluation
- Maria declined mental health treatment due to the belief that her problems were medical and "therapy is for crazy people."

## MENTAL ILLNESS STIGMA

- Higher among racial/ethnic minorities
- Major barrier to accessing treatment
- Cultural, linguistic, literacy factors
- Underuse of mental health services

## STRESS / TRAUMA

- One of the top ten determinants of health disparity
- Can directly affect biological processes that lead to disease
- High stress burden in racial/ethnic groups from trauma
- Lack of resources & other structural barrier

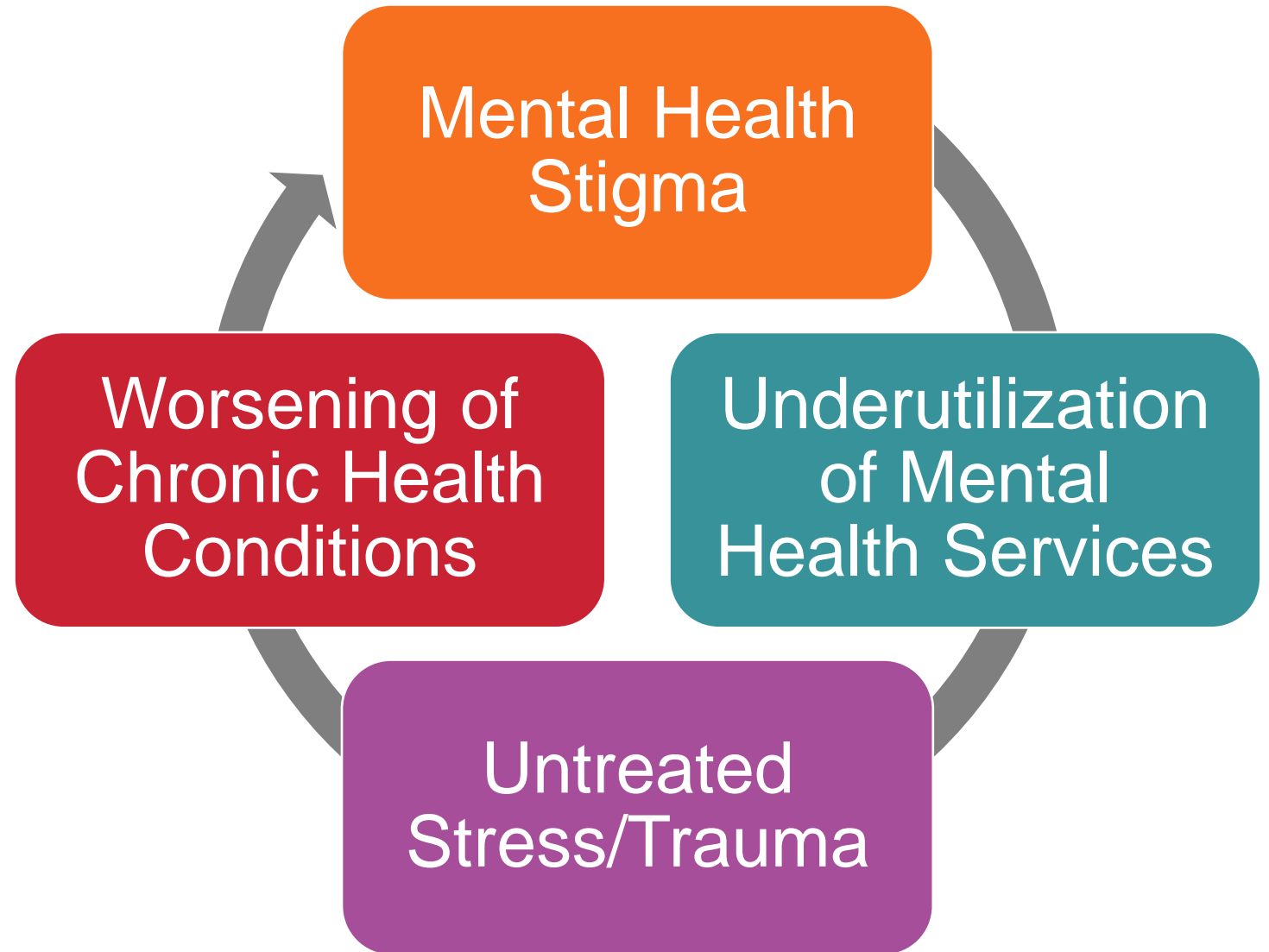
Unique challenges  
to racial/ethnic  
minority patients  
like Maria

## HEALTH DISPARITIES

- Well documented among racial/ethnic groups
- Many chronic illnesses have been clearly linked to high levels of stress
- Stress-related chronic diseases common



# VICIOUS CYCLE OF STRESS RELATED HEALTH PROBLEMS





How can we provide culturally-congruent treatment that also addresses stress-related mental and physical health issues?



# BIOFEEDBACK

Evidence based treatment using specialized equipment to train people on how to recover from stress and stress-related medical conditions

## **When you are stressed**

- Heart & breathing rates increase
- Muscles tighten
- Blood pressure increases

## **Biofeedback trains you to**

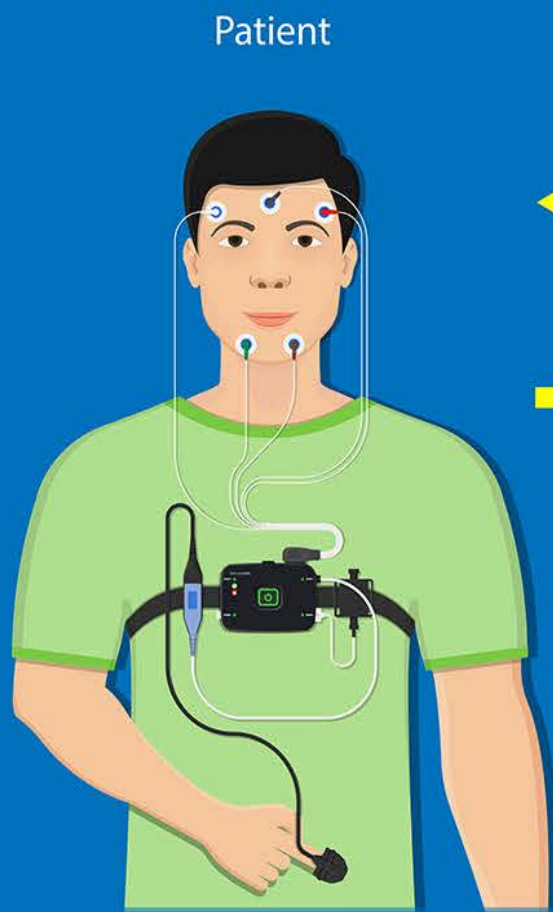
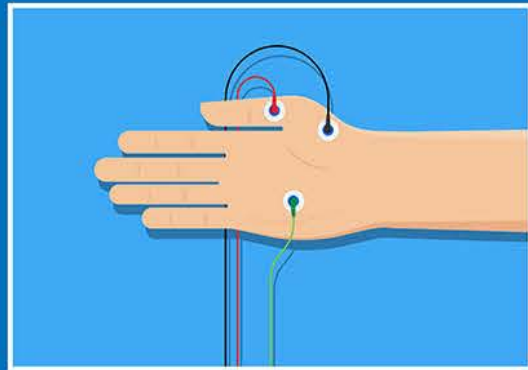
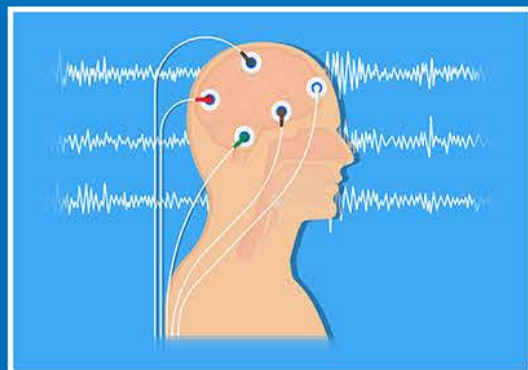
- Slow heart and breathing rates
- Relax muscles
- Lower blood pressure



# BIOFEEDBACK APPLICATIONS

- Anxiety / Stress
- Headaches / Chronic Pain
- Depression / PTSD
- Stress-Related Medical Conditions
  - Diabetes
  - Hypertension
  - Irritable Bowel Syndrome

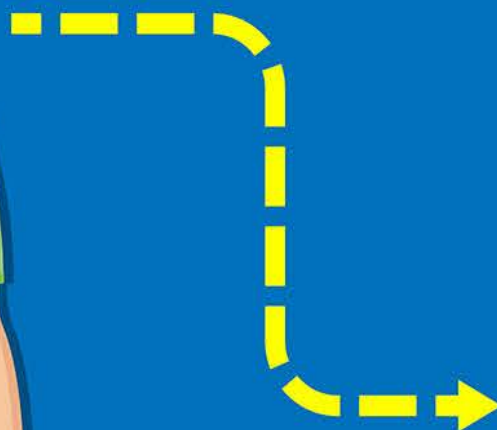
Sensors-transducers measure the patient's physiological status



Patient

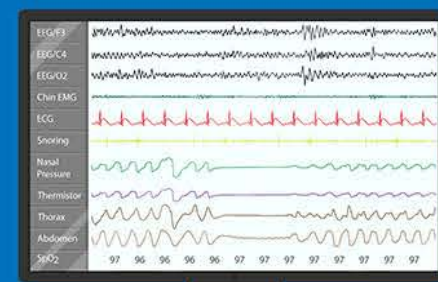
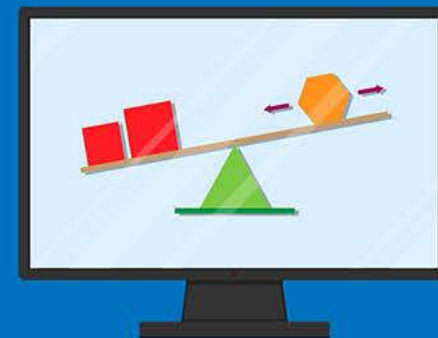
ADD

Audio - Visual Feedback

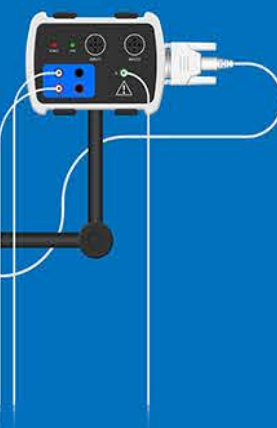


Measured Signal From Sensor - Transducer

Audio - Visual Stimulation  
Screen Display



Signal Processing







# BIOFEEDBACK TECHNIQUES

Muscle Relaxation

Diaphragmatic  
Breathing

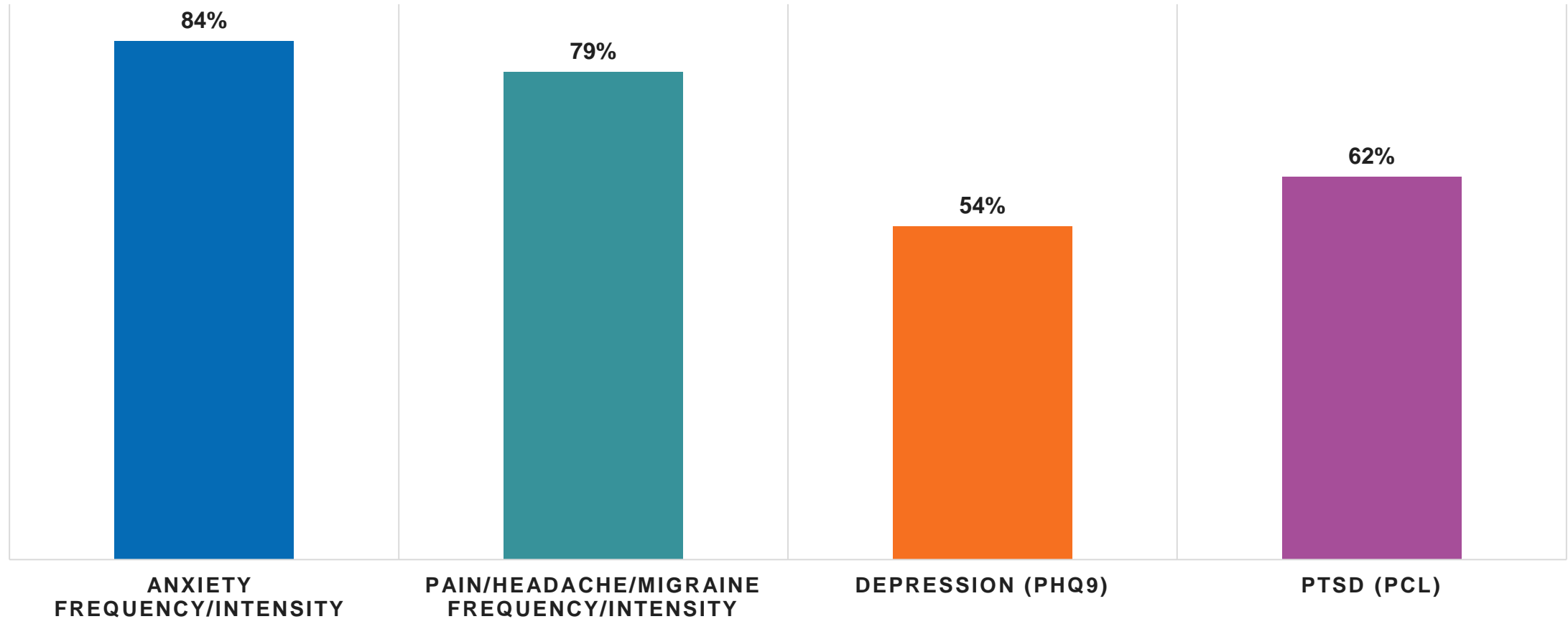
Mindfulness

Established  
Relaxation  
Strategies

Self- Compassion



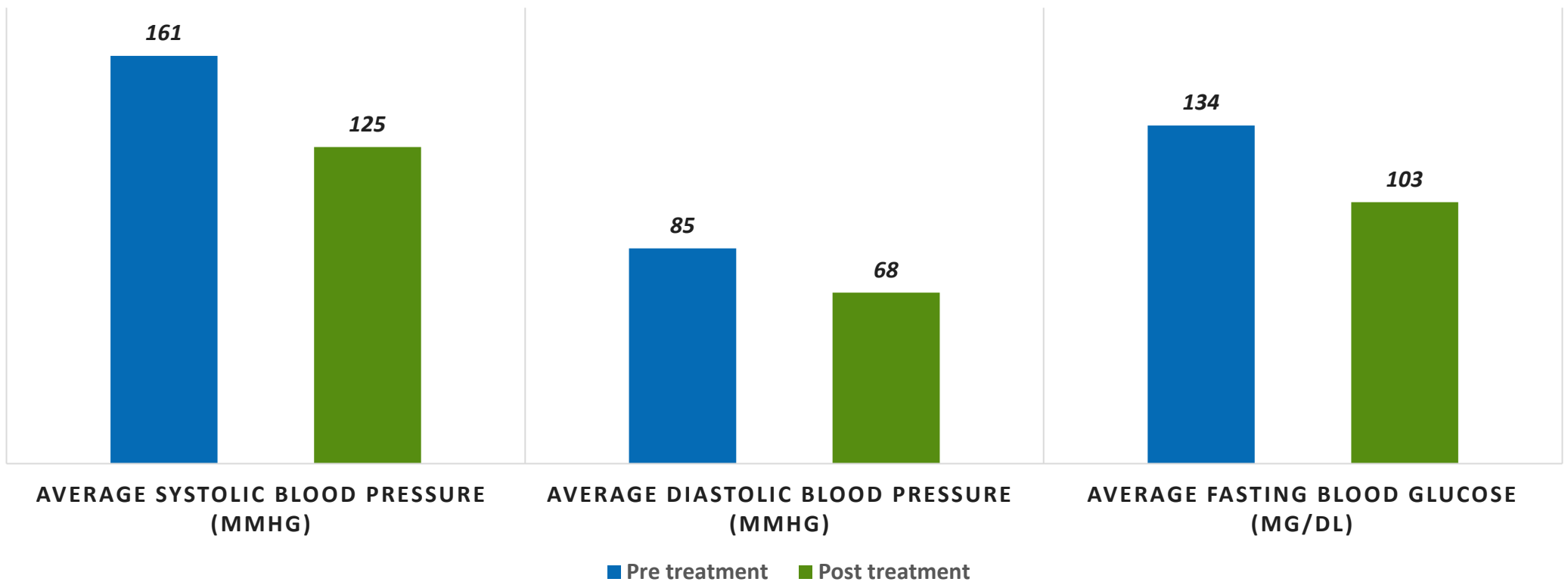
# SELF REPORTED IMPROVEMENTS





# CHRONIC DISEASE MANAGEMENT

Home-monitoring, pre and post biofeedback treatment





# MARIA'S EXPERIENCE

- From 3 - 4 Emergency Room visits each year to zero visits this past year
- Significantly better managed
  - Post traumatic stress
  - Headache
  - Blood pressure



“I’ve learned what stress is, how to manage it, and how to deal with the trauma that was causing so many problems.”

- *Maria*

“She looks like a different, greatly improved woman. Her somatic complaints have improved about 70% without medications!”

- *Maria’s doctor*



# INNOVATIVE AND UNIQUE

- Highly specialized, evidenced-based treatment not normally available to minorities
- Culturally tailored to address systemic barriers to accessing mental health services
- Services integrated into our Primary Care settings
- Treatment protocols designed by our IBH team
  - At-home biofeedback training
  - Mindfulness-based
  - Trauma-ready
  - Biofeedback-integrated exposure therapy



# OUR INTEGRATED BEHAVIORAL HEALTH TEAM



# QUESTIONS?



SAN MATEO COUNTY HEALTH

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