

Clinical quality indicators among patients with mental illness following the implementation of a patient centered medical home

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Purpose

To examine quality of care in the post-PACT era to determine if and to what extent disparities in care exist for individuals with and without mental illness.

Poll Question #1

- What is your primary role in VA?
 - Clinician
 - Researcher
 - Manager or policy-maker
 - Student, trainee, or fellow
 - Other

Poll Question #2

- What if any is your involvement with PACT?
 - Physician
 - Nurse
 - Social Worker or Mental Health provider
 - Other staff
 - Not involved with PACT

Agenda

- Background
 - Rates of mental illness among Veterans in primary care
 - Disparities found in Veterans with mental illness
 - Veterans Health Administration (VHA) initiatives within primary care
- Methods
- Results
- Discussion

Background

Rates of mental illness high are in Veterans

- 25% of Veterans in VHA primary care had at least one common mental health condition (n = 4,461,208):
 - Depression (13%)
 - Posttraumatic stress disorder (PTSD) (9.3 %)
 - Substance use disorder (SUD) (8.3%)
 - Anxiety (4.8%)
 - Serious mental illness (SMI; i.e., schizophrenia or bipolar disorder) (3.7%)

Health disparities have been detected in Veterans with Mental Illness

- Disparities in overall health and prognosis found in individuals with mental illness
 - Higher rates of common medical conditions (e.g., diabetes, hypertension, cardiovascular disease)
 - Higher rates of ED use and hospitalizations
 - Increased odds of death within one year
- Quality of prevention and chronic disease management care may contribute to poor health and prognosis

Prevention & Chronic Disease Management

- **Prevention**
 1. Cancer Screening
 2. Tobacco Use Screening & Referral
 3. Immunizations
- **Chronic Disease Management**
 1. Diabetes Mellitus (DM)
 2. Hypertension (HTN)
 3. Ischemic Heart Disease (IHD)
 4. Heart Failure (HF)

Previous VHA and non-VHA studies have shown lower quality of care among patients with mental illness

- **Systematic review** (Mitchell et al., 2009):
 - 31 studies of medical care in individuals with and without mental illness
 - 6 VHA studies
 - 19 of 27 examining mental illness revealed disparities
 - 10 of 10 examining substance misuse revealed disparities
- **Evidence-Based Synthesis Program** (Gierisch et al., 2014):
 - 23 studies of preventive care and/or chronic disease management quality indicators
 - 12 VHA studies
 - Small to moderate disparities related to cancer screening, immunizations, diabetes care

VHA studies from 2002-2008 (Pre-PACT)

- Lower odds of **breast cancer screening, cervical cancer screening, pap smears, and colorectal cancer screening** (Druss et al., 2002)
- Lower odds of receiving **pneumococcal or influenza vaccines** (Druss et al., 2002)
- Failure to receive **diabetes care** was more common in Veterans with mental illness (Desai et al., 2002; Frayne et al., 2005; Kilbourne et al., 2008)
 - Lower odds of receiving **foot exam, retinal exam, renal testing, LDL-Cholesterol testing, HbA1c testing**

VHA initiatives within primary care

- **PC-MHI:** Primary Care Mental Health Integration
– 2008
- **PACT:** Primary Aligned Care Teams
– 2010

Other Team Members

Clinical Pharmacy Specialist

± 3 panels

Social Work

± 2 panels

Integrated Behavioral Health

Psychologist ± 3 panels

Social Worker ± 5 panels

Care Manager ± 5 panels

Psychiatrist ± 10 panels

Team:

Assigned to 1 panel

(±1200 patients)

- **Provider: 1 FTE**
- **RN Care Manager: 1 FTE**
- **Clinical Associate (LPN, Medical Assistant): 1 FTE**
- **Clerk: 1 FTE**

Patient

Caregiver

Team-Based Care

Elements of PACT

- Sustained partnership with patients
- Systems based approach to improving quality and safety
- Enhance access to care
- Team based care
- Coordinate care
- Comprehensiveness

Research suggests PACT & PC-MHI may improve outcomes in Veterans with mental illness

- Examples of previous PACT & PC-MHI findings:
 - Increased mental health diagnoses
 - No difference in treatment utilization compared to specialty mental health care
 - More likely to continue follow-up mental health care
 - Lower risk of hospitalizations or ED visits for Veterans with depression, SUD and anxiety seen in PACT and PC-MHI

Study Objective

To examine chronic disease management and prevention quality indicators in the post-PACT era to determine if and to what extent disparities in care exist for individuals with and without mental health illness.

Methods

Methods

- External Peer Review Program (EPRP)
 - Chart audit by independent external contractor
 - Data extracted from medical record via manual abstraction
 - Assesses clinical quality-using standard performance criteria
 - High interrater reliability in previous studies (e.g., $\kappa = 0.9$; Jha et al., 2003)

Methods

- **Descriptive Data**
 - Examine EPRP quality indicator completion rates among primary care patients in the three years post-PACT implementation
 1. Cancer Screening
 2. Tobacco Use Screening and Referral
 3. Immunizations
 4. Diabetes Mellitus (DM)
 5. Hypertension (HTN)
 6. Ischemic Heart Disease (IHD)
 7. Heart Failure (HF)
 - **Outcome:** % of patients meeting EPRP quality indicators

Methods

- **Descriptive Data**
 - Characterized rates of meeting EPRP quality indicators across six mental illness diagnostic groups
 1. Any mental illness
 2. Depression
 3. PTSD
 4. Anxiety
 5. SUD
 6. SMI (i.e., bipolar disorder , schizophrenia)
- Identified differences $\geq 5\%$ between Veterans with and without mental illness

Methods

- Study Cohort
 - Primary Care Management Module
 - Patients enrolled and assigned to a primary care provider
 - Examined three yearly cohorts starting 4/2010 and ending 3/2013

Methods

- Data Sources
 - Corporate Data Warehouse – demographics, clinical characteristics, ICD-9 diagnosis, health services utilization
 - Depression, PTSD, Anxiety and SMI = ≥ 2 outpatient visits or ≥ 1 inpatient hospitalization with dx codes
 - SUD = only ≥ 1 hospitalization or outpatient visit
 - ICD9 codes for common medical conditions (e.g., diabetes, hypertension, ischemic heart disease, chronic heart failure, cancer)

Results

Sample Characteristics

- 4,490,606 patients enrolled and assigned to a primary care provider between 4/2010 and 3/2011

Demographics	
Age	62.4
Male	93.6%
Married	56.7%
White, Non-Hispanic	76.2%
Black, Non-Hispanic	14.9%
Hispanic	5.5%
≥ 50% Service Connected	57.2%

Sample Characteristics

- 1,121,845 (24.9%) had at least one psychiatric diagnosis

Any Mental Illness	24.9%
Depression	13.2%
Posttraumatic Stress Disorder (PTSD)	9.0%
Substance Use Disorder (SUD)	8.1%
Anxiety	4.7%
Serious Mental Illness (SMI)	3.2%

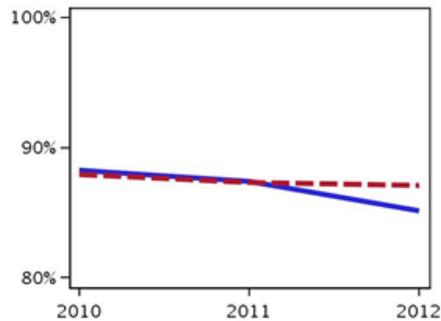
Results

- Any Mental Illness vs. No Mental Illness

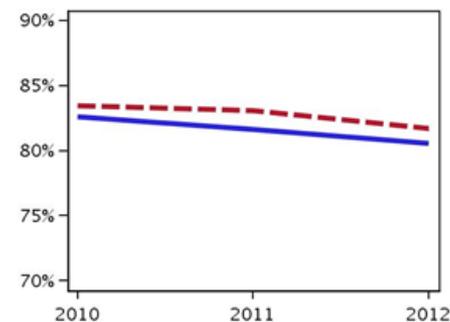
Cancer Screening—No differences $\geq 5\%$ seen when comparing Veterans with and without mental illness

-----No Mental Illness —Mental Illness

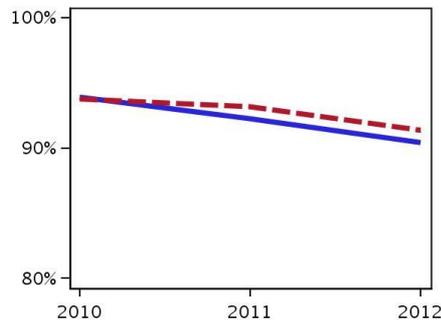
Breast Cancer Screen (women ages 50-69)



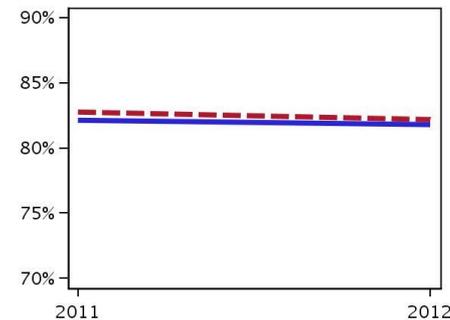
Breast Cancer Screen (women ages 40-49)



Cervical Cancer Screen (women ages 21-64)



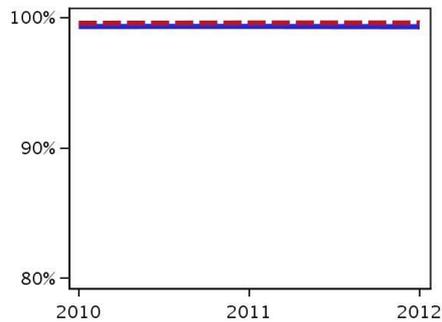
Colorectal Cancer Screen (ages 50-75)



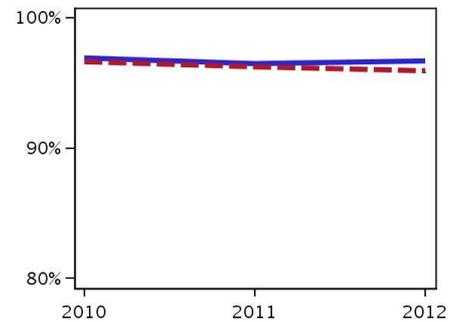
Tobacco Use Screening & Referral—No differences $\geq 5\%$ seen when comparing Veterans with and without mental illness

--- No Mental Illness — Mental Illness

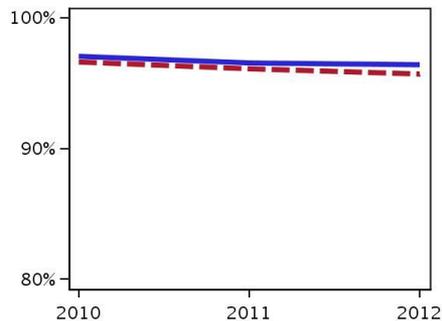
Screened for tobacco use



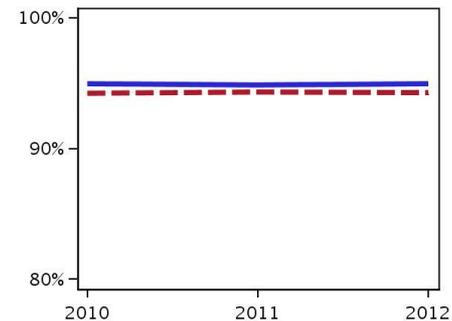
Pts using tobacco provided with counsel



Pts using tobacco offered referral



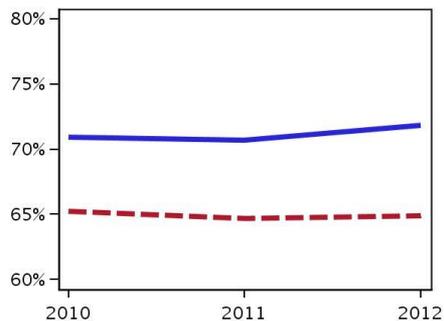
Pts using tobacco offered medication



Immunizations—Higher rates of Influenza Immunization seen in Veterans with ANY Mental Illness

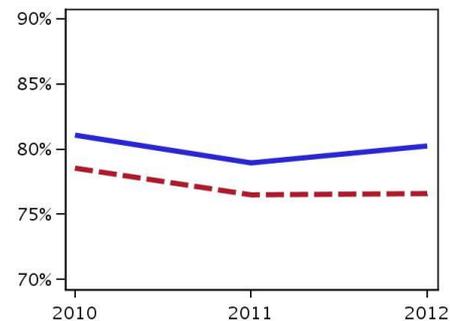
-----No Mental Illness —Mental Illness

Influenza Immunization (ages 50-64)

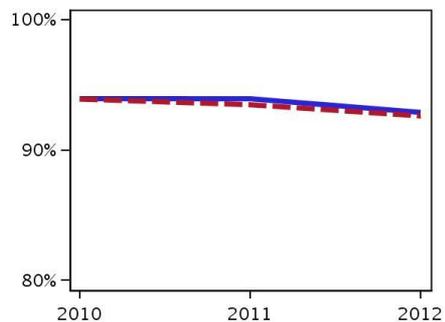


- Rates 5.7-6.9% HIGHER

Influenza Immunization (age ≥ 65)



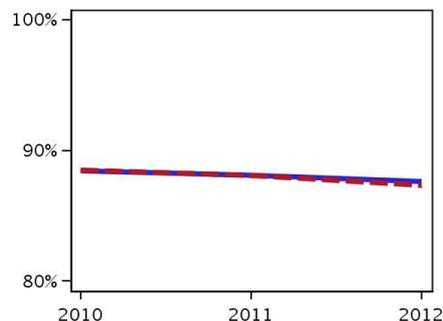
Pneumococcal Immunization



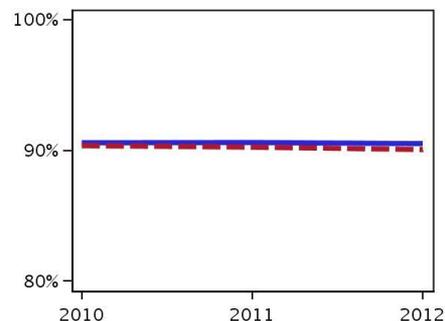
Diabetes—No differences $\geq 5\%$ seen when comparing Veterans with and without mental illness

-----No Mental Illness —Mental Illness

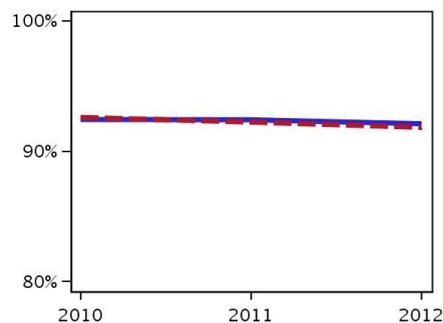
Foot Sensory Exam



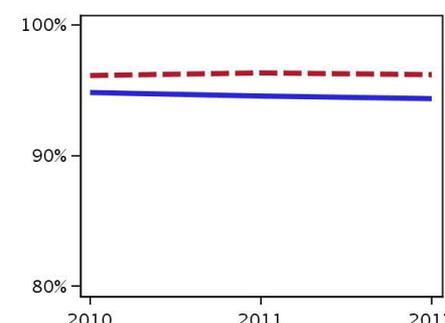
Foot Pedal Pulses



Foot Inspection



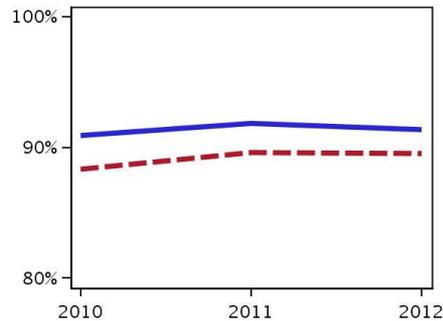
Renal Testing



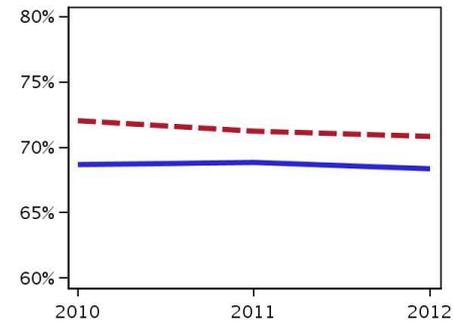
Diabetes—No differences $\geq 5\%$ seen when comparing Veterans with and without mental illness

----- No Mental Illness — Mental Illness

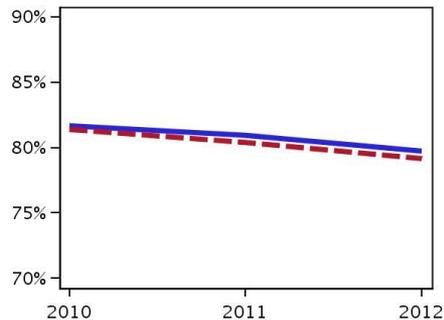
Retinal Exam



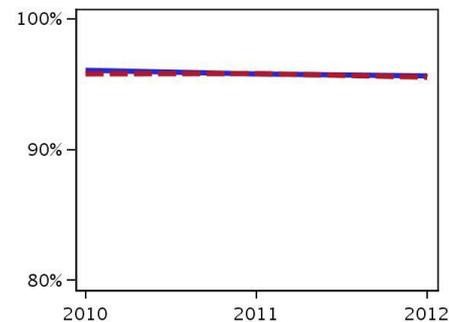
LDL-Cholesterol < 100



Blood Pressure < 140/90



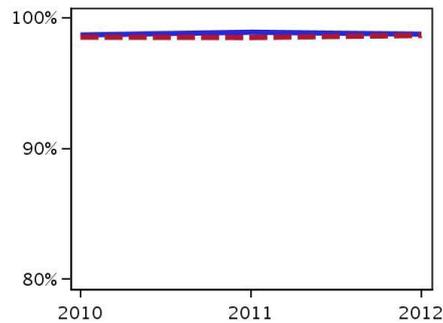
Blood Pressure < 160/100



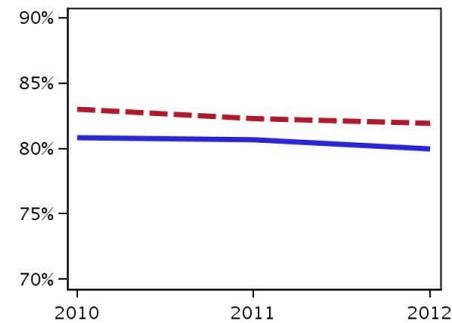
Diabetes—No differences $\geq 5\%$ seen when comparing Veterans with and without mental illness

-----No Mental Illness —Mental Illness

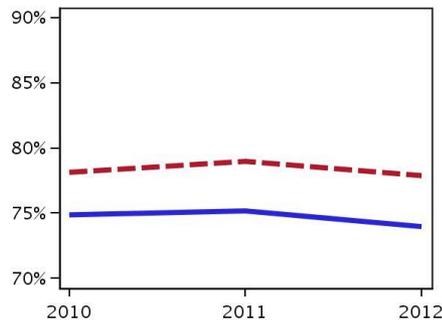
HbA1c Annual



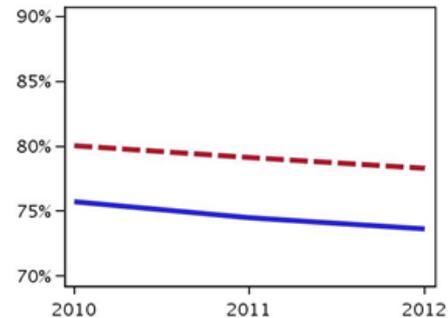
HbA1c < 9



Acetylsalicylic Acid (aspirin) included in current meds



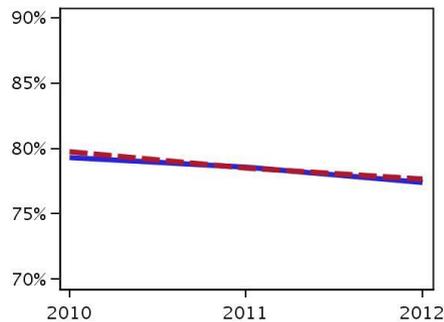
ACE Inhibitor or ARB included in current meds



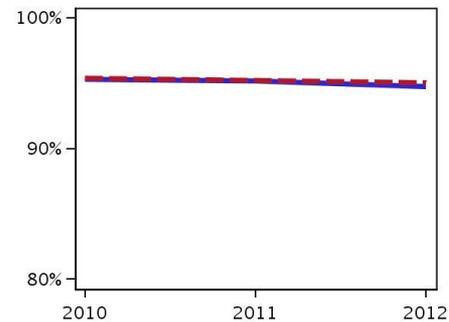
Hypertension—No differences $\geq 5\%$ seen when comparing Veterans with and without mental illness

-----No Mental Illness —Mental Illness

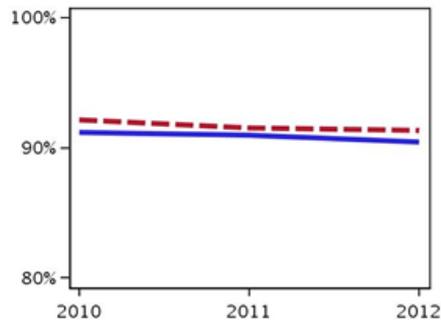
Dx HTN and Blood Pressure < 140/90



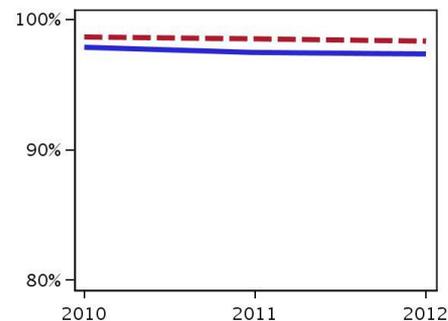
Dx HTN Blood Pressure < 160/100



No Dx of HTN Blood Pressure \leq 140/90



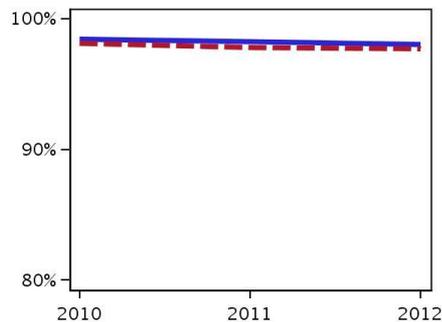
No Dx of HTN Blood Pressure < 160/100



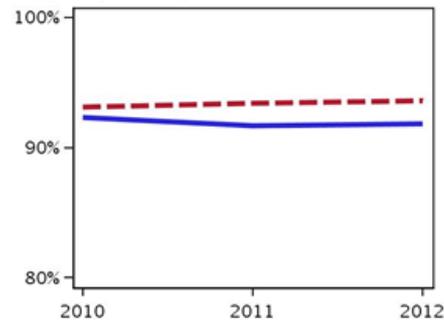
Ischemic Heart Disease—No differences $\geq 5\%$ seen when comparing Veterans with and without mental illness

----- No Mental Illness — Mental Illness

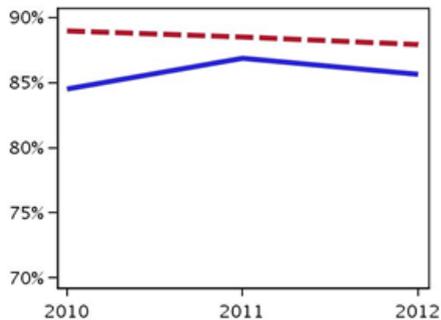
Hyperlipidemia screen



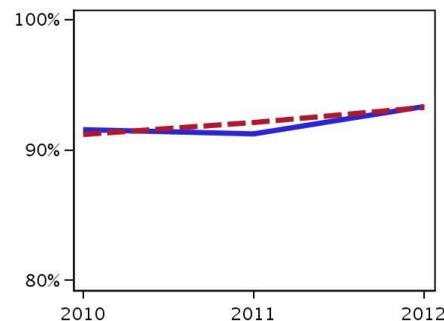
Acute Myocardial Infarct (AMI)-Acetylsalicylic Acid (aspirin) at most recent visit (OP)



AMI LVEF < 40 on ACE Inhibitor or ARB (OP)



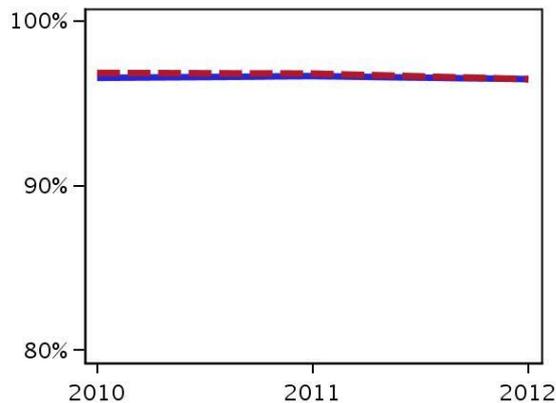
AMI pts discharge alive w/ AMI who received persistent Beta Blocker



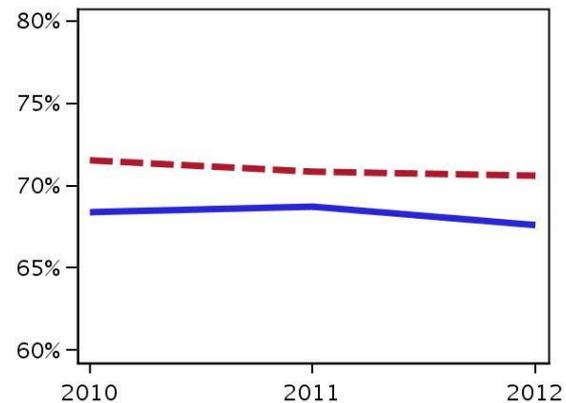
Ischemic Heart Disease—No consistent differences $\geq 5\%$ seen when comparing Veterans with and without mental illness

-----No Mental Illness —Mental Illness

LDL-Cholesterol measured



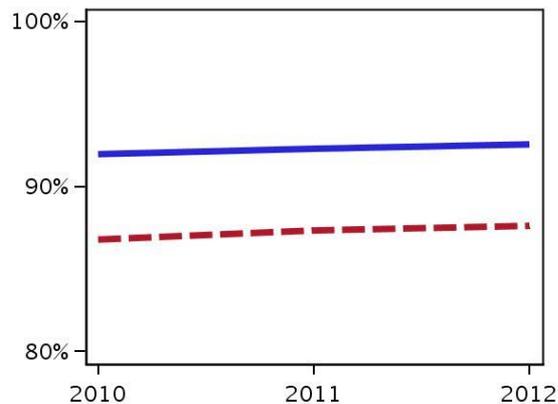
LDL-Cholesterol < 100 (OP)



Heart Failure—Higher rates of documented Left Ventricular Function (LVF) seen in Veterans with mental illness

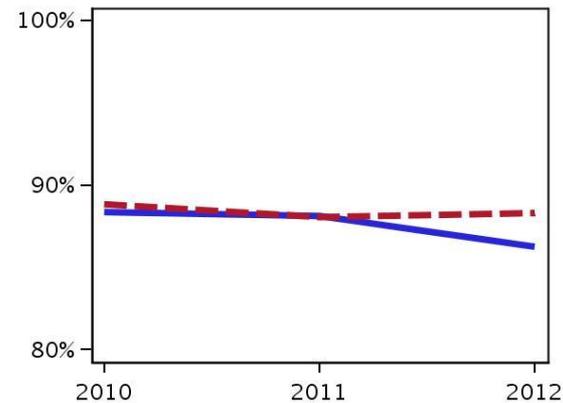
-----No Mental Illness —Mental Illness

HF-LVF documented



- Rates 4.9%-5.2% HIGHER

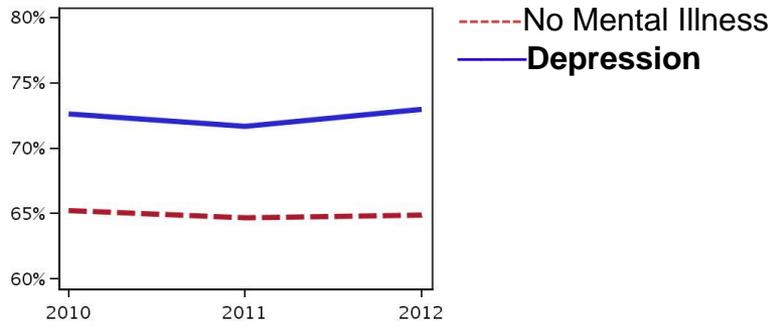
LVEF < 40 on ACE Inhibitor or Angiotensin Receptor Blocker (ARB)



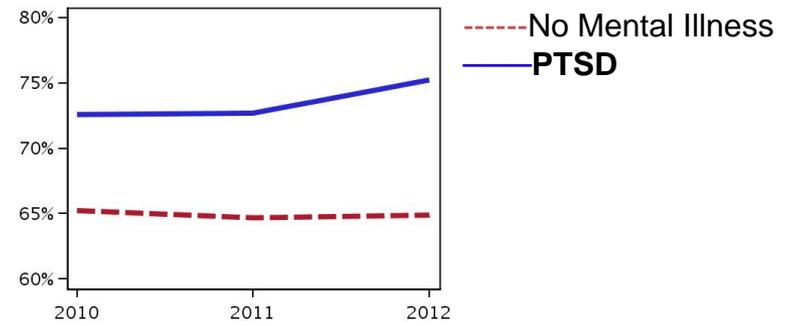
Results

- **Specific Mental Illness Groups**
 1. Depression vs. No Mental Illness
 2. PTSD vs. No Mental Illness
 3. Anxiety vs. No Mental Illness
 4. SUD vs. No Mental Illness
 5. SMI vs. No Mental Illness

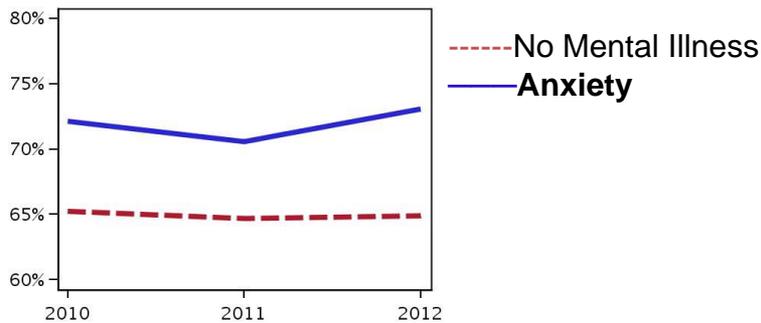
Immunizations—Higher rates of Influenza Immunization seen in Veterans with *Depression*, *PTSD*, *Anxiety*, and *SMI*



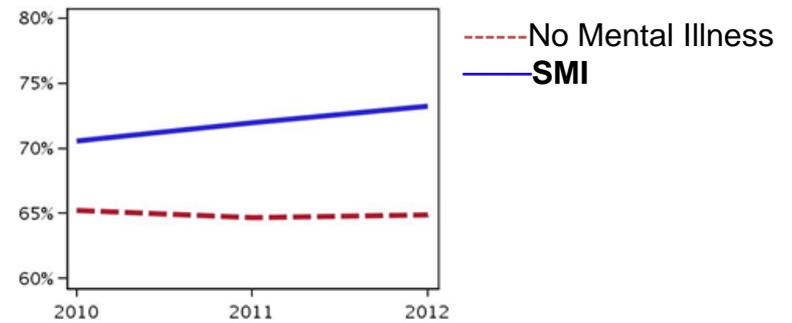
- **Rates 7.0-8.1% HIGHER**



- **Rates 7.4-10.3% HIGHER**

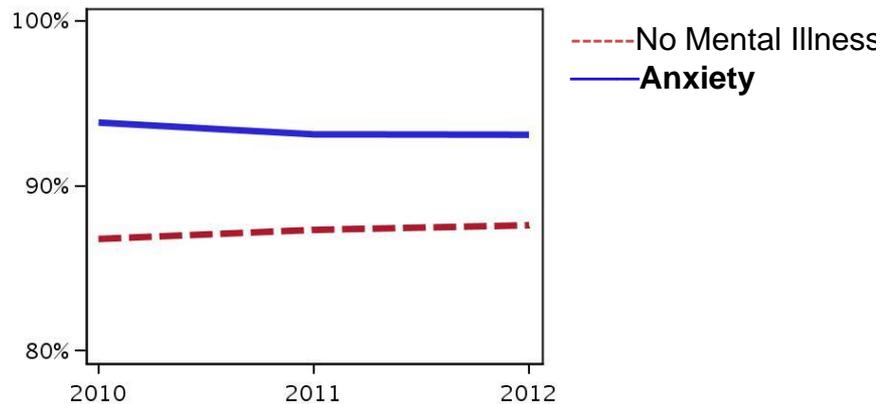


- **Rates 5.9-8.2% HIGHER**

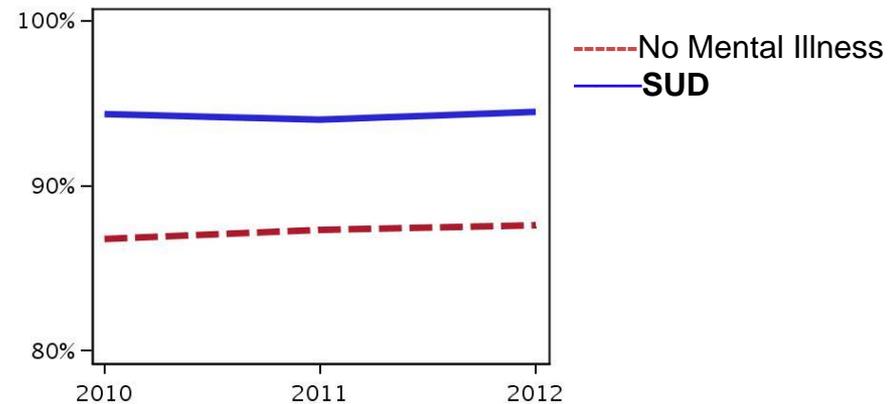


- **Rates 5.4-8.3% HIGHER**

Heart Failure—Higher rates of documented Left Ventricular Function seen in Veterans with *Anxiety* and *SUD*

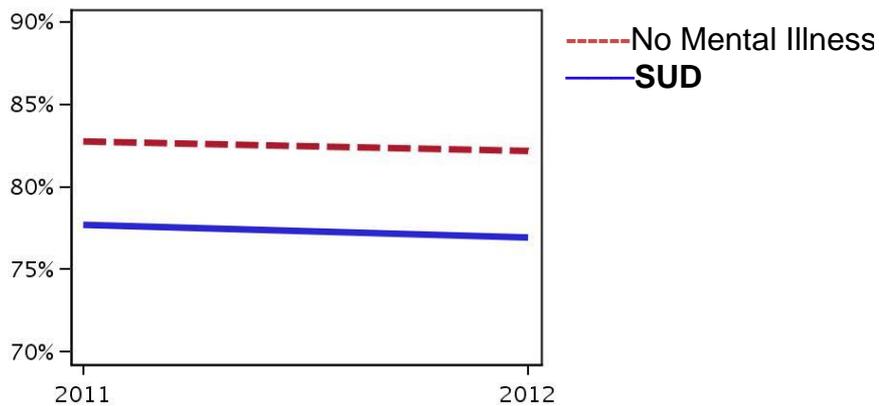


- Rates 5.5-7.0% HIGHER

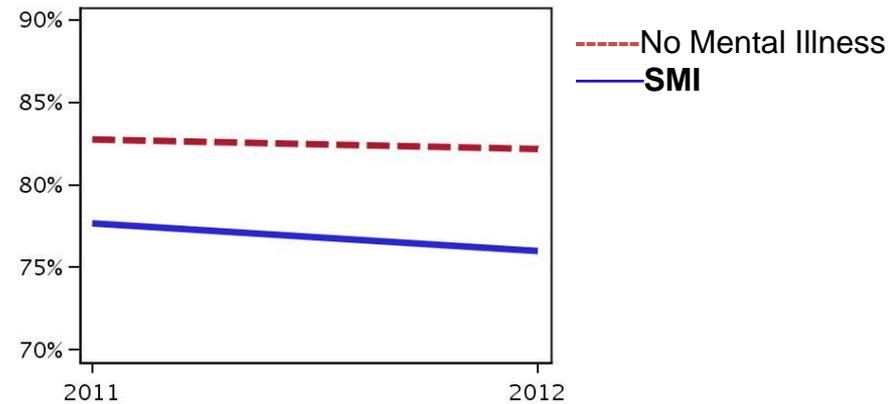


- Rates 6.9-7.5% HIGHER

Cancer Screening—Lower rates of Colorectal Cancer Screening seen in Veterans with *SUD* and *SMI*



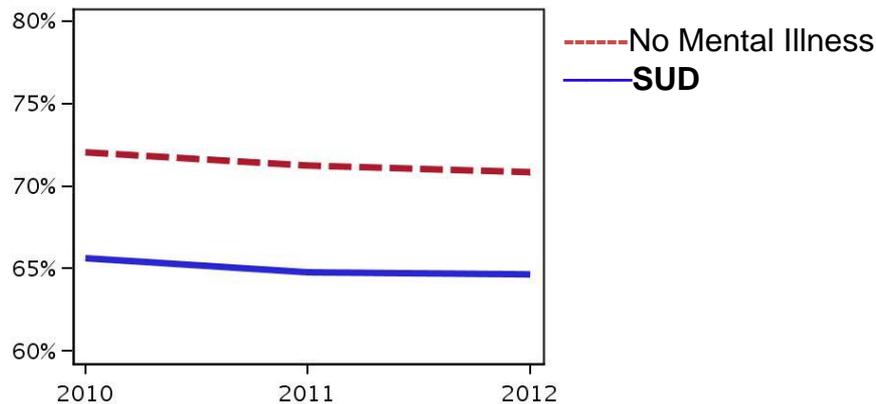
- **Rates 5.1-5.3% LOWER**



- **Rates 5.1-6.2% LOWER**

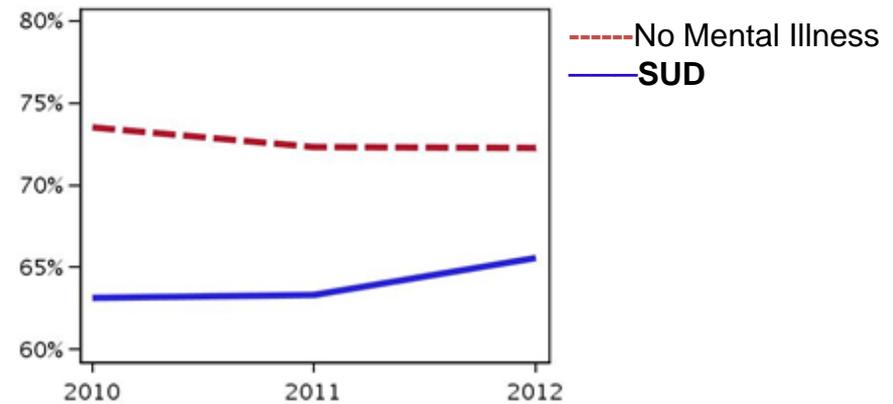
Diabetes & Ischemic Heart Disease—Lower rates of LDL-Cholesterol < 100 seen in Veterans with *SUD*

Diabetes



- Rates 6.2-6.4% LOWER

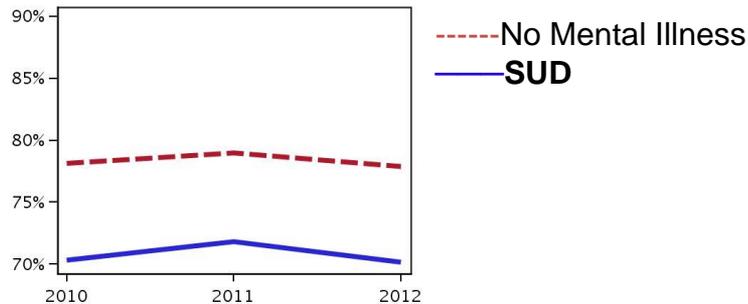
Ischemic Heart Disease



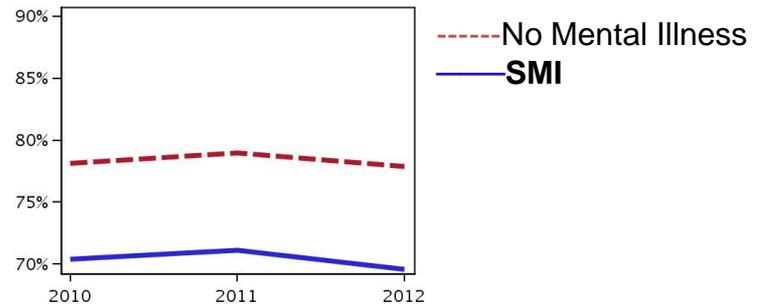
- Rates 6.7-10.5% LOWER

Diabetes—Lower rates of aspirin, ACE Inhibitor, and ARB seen in Veterans with *SUD* and *SMI*

Acetylsalicylic Acid (aspirin) included in current medication

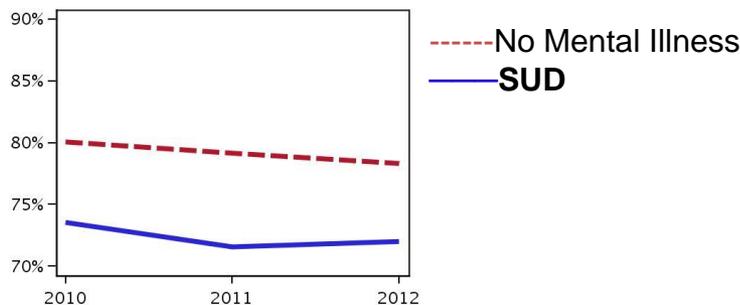


- Rates 7.2-7.8% LOWER

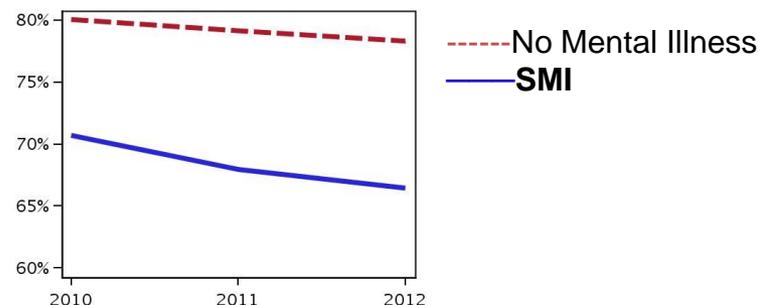


- Rates 7.7-8.3% LOWER

ACE Inhibitor or ARB included in current medication

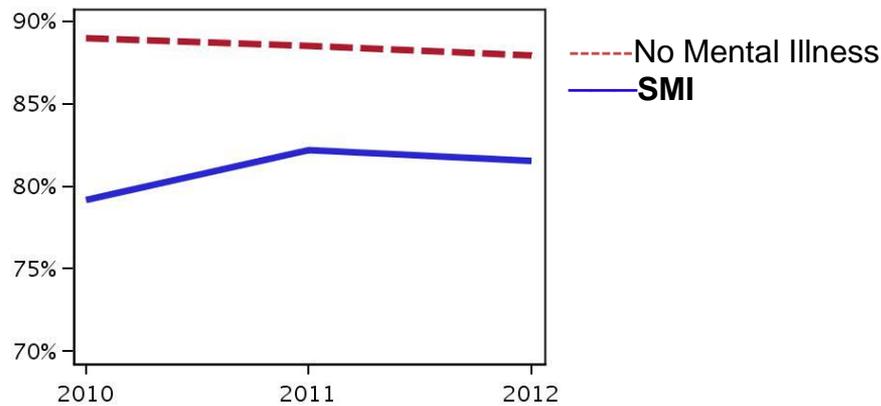


- Rates 6.3-7.5% LOWER



- Rates 9.4-11.9% LOWER

Ischemic Heart Disease—Lower rates of LVEF <40 on ACE Inhibitor or ARB Therapy seen in Veterans with *SMI*



- **Rates 6.3-9.8% LOWER**

Summary of Findings:

Consistent differences $\geq 5\%$ were found in 8 of 35 quality indicators examined

	Depression	PTSD	Anxiety	SUD	SMI
Colorectal Screening				↓	↓
DM—LDL-Cholesterol <100				↓	
DM—ASA among current meds				↓	↓
DM—ACE inhibitor/ARB among current meds				↓	↓
IHD—LVEF < 40 on ACE Inhibitor/ARB					↓
IHD—LDL-Cholesterol <100				↓	
Immunizations	↑	↑	↑		↑
HF—LVF Documented			↑	↑	

Discussion

Summary

- Overall clinical quality was high
- Minimal differences seen when comparing Veterans with and without mental illness
 - % meeting quality care indicator HIGHER for Veterans with mental illness on 2 of 35 indicators
- Differences seen across those with and without specific mental illness diagnoses were small with few exceptions
 - % meeting quality care indicator LOWER for Veterans with SUD and SMI on 6 of 35 indicators

Discussion

- Veterans with mental illness appear to be getting high quality care in the post-PACT era
- PACT is designed to improve access and coordination of care
- PACT may represent an important opportunity to reach Veterans with mental illness and provide them with comprehensive, coordinated, patient-centered care

Limitations

- Observational study
 - Examined post-PACT data only
 - Comparison of rates of patients meeting EPRP quality indicator using $\geq 5\%$
- Administrative data
 - ICD-9 codes may under detect mental illness
 - Cannot examine severity
 - Did not follow individual patients
- VHA Study
 - Generalizability limited

Future Directions

- Case Mix Adjustment
- Pre vs. Post-PACT examination
- High risk groups (i.e., SUD, SMI, comorbidity)
- Comparison to other health care settings

Acknowledgements

VHA National PACT Evaluation

- Stephan D. Fihn, MD, MPH, Director
- Karin Nelson, MD, MSHS, Associate Director
- **Mental Health Subgroup**
 - Ranak Trivedi, PhD, Lead Investigator
 - John Fortney, PhD
 - Edward Post, MD, PhD
 - Rebecca Piegari, MS
- **Funding:**
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 - HSR&D CDA-09-206 to R. Trivedi



Questions/Comments?

Contact Information:

Kendall Browne, PhD (kendall.browne@va.gov)

References

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