


Telemedicine-Based Collaborative Care Models for Rural Primary Care Practices

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Funding

- National Institute of Mental Health
 - R01 MH076908
- VA Health Services Research and Development
 - IIR 00-078-3
 - IMV 04-360

Collaborative Care

- 75% of patients treated for depression receive care in primary care settings
- 20/28 randomized trials of collaborative care significantly improved outcomes¹:
 - Median effect for response rate: +18%
 - Median effect for remission rate: +16%

1) Williams J et. al. Systematic review of multifaceted interventions to improve depression care. *General Hospital Psychiatry*, 29, 91-116, 2007

Structure of Collaborative Care

- **Multi-faceted** – Uses multiple strategies to improve outcomes.
- **Multi-targeted** – Targets patients, providers and systems.
- **Stepped-care** – Increases intensity of services for those failing to respond.
- **Shared-care** – Primary care providers and mental health specialists function as a team.

Components of Practice-Based Collaborative Care

- Provider education
- Screening
- Patient education, activation, and self-management
- Regularly scheduled follow-up assessments
- Use of clinical information systems and treatment guidelines
- Ready access to mental health specialists
- Delegation of key clinical activities to non-physician members of a practice team

Barriers to Implementing Practice-Based Collaborative Care in Rural Primary Care

- On-site mental health specialists are typically unavailable.
- Collaborative care interventions are more effective if they include MHS¹.
- Linkages to off-site mental health specialists are weak.
- Collaborative care is effective in urban practices, but **NOT** rural practices.²

- 1) Gilbody S, Bower P, Fletcher J, Richards D, Sutton AJ. Collaborative care for depression: a cumulative meta-analysis and review of longer-term outcomes. *Archives of Internal Medicine* 2006;166:2314-21.
- 2) Adams S, Xu S, Dong F, Fortney J, Rost K. Differential Effectiveness of Depression Disease Management for Rural and Urban Primary Care Patients, *Journal of Rural Health*, 2006 22(4):343-50.

Telemedicine-Based Collaborative Care for Small Rural PC Clinics

- Offsite depression care team
 - Nurse care manager
 - Psychiatrist
 - Other mental health specialists (pharmacist, psychologist)
- Telephones
 - Care manager encounters with patients at home
- Interactive Video
 - Psychiatric evaluations with patients at PC clinic
- Electronic Medical Records
 - Communication among on-site PCPs and offsite depression care team

VA Telemedicine Enhanced Antidepressant Management Study

- **Objective:** Compare quality and outcomes of telemedicine-based collaborative care to usual depression care.
- **Study Design**
 - Seven CBOCs lacking on-site psychiatrists
 - Screened 18,000 patients
 - Enrolled 395 patients (excluded specialty MH patients)
 - 6 and 12 month follow-ups (91% and 85% FU rates)
 - Intent to treat analysis

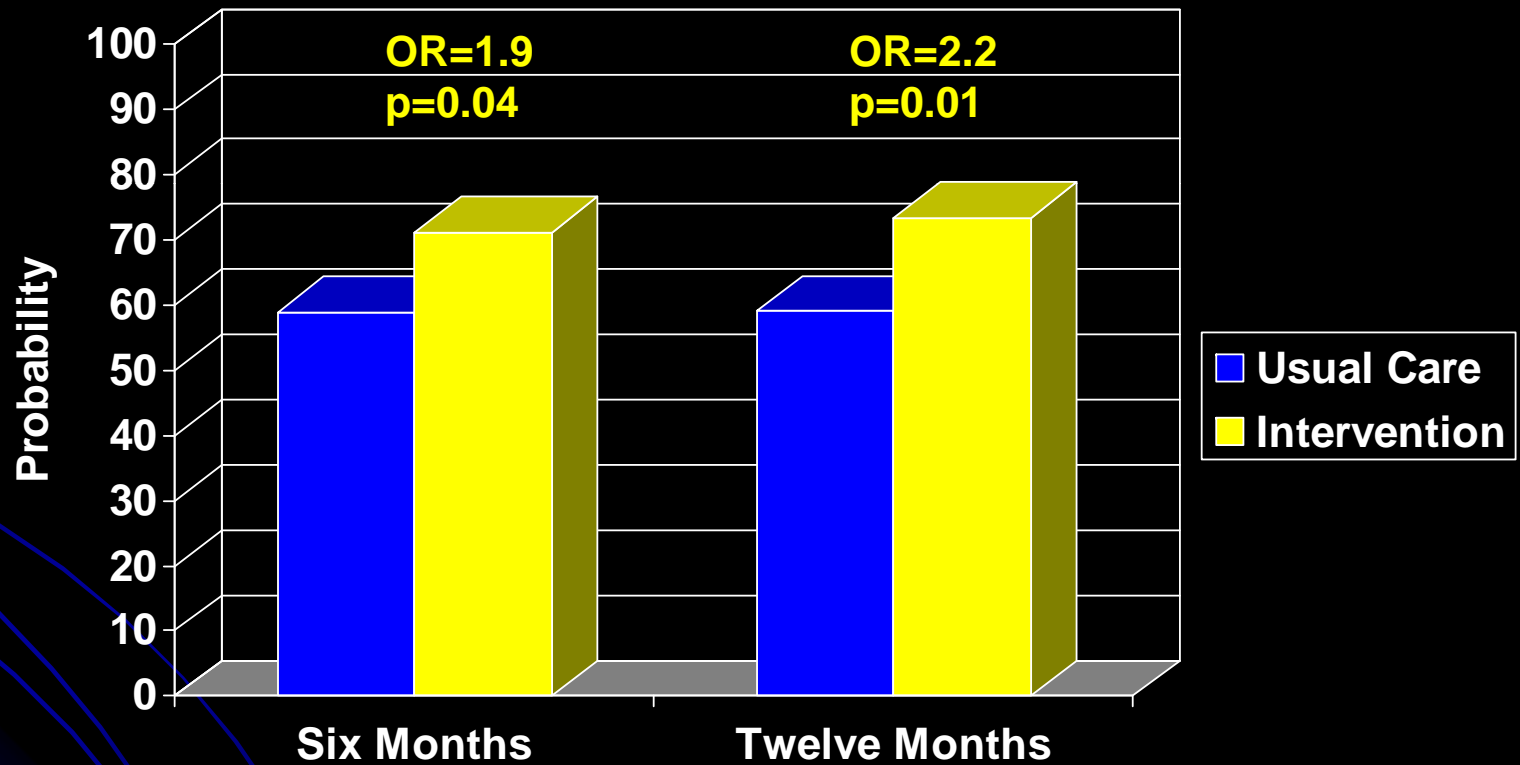
Intervention Components/Steps

Step	Intervention Component	Provider Type	Communication
Pre-Baseline	Provider Education	Tele-psychiatrist	Interactive Video
	Depression Screening	RA	Telephone/EMR
Step 1	Antidepressant Therapy/watchful waiting	PCP	Face-to-face
	Patient education and activation	Nurse	Telephone
	Barrier assessment and resolution	Nurse	Telephone
	Symptom /medication monitoring	Nurse	Telephone/EMR
Step 2	Medication history	Pharmacist	Telephone/EMR
	Recommended antidepressant therapy	PCP	Face-to-face/EMR
	Symptom/medication monitoring	Nurse	Telephone/EMR
	Medication management	Pharmacist	Telephone/EMR
Step 3	Psychiatric Consultation	Tele-psychiatrist	Interactive video/EMR
	Recommended antidepressant therapy	PCP	Face-to-face/EMR
	Symptom/medication monitoring	Nurse	Telephone/EMR
	Medication management	Pharmacist	Telephone/EMR

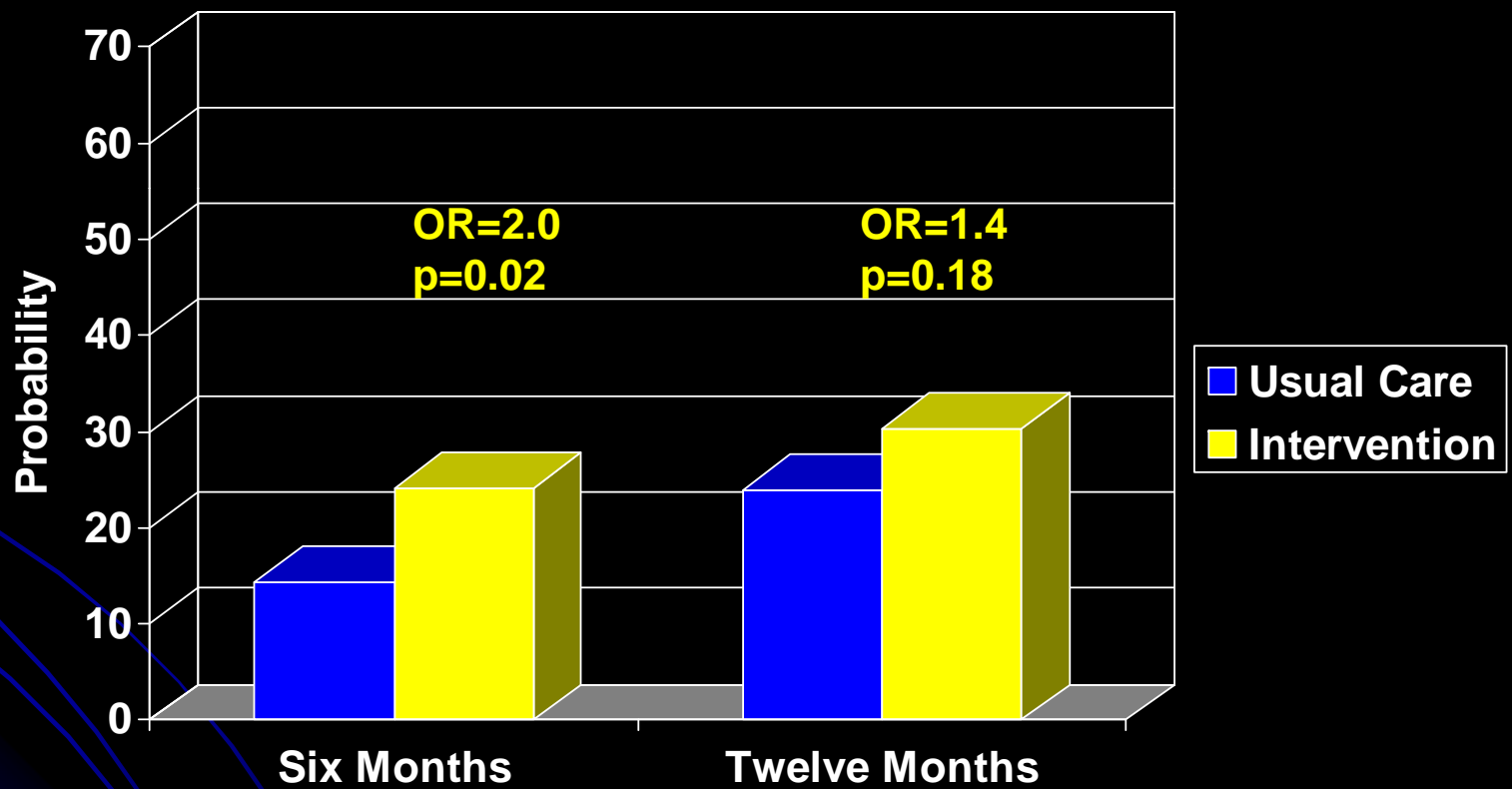
Clinical Characteristics of Sample

Clinical Casemix	Mean/Percent
Current Major Depressive Disorder	82.0%
Prior Depressive Episodes	2.7
Prior Depression Treatment	66.6%
Current Depression Treatment	41.0%
SF12 Physical Component Summary	30.0
SF12 Mental Component Summary	36.5
Chronic Physical Health Conditions	5.5
Current Panic Disorder	9.6%
Current Generalized Anxiety Disorder	45.8%
Current PTSD	23.8%

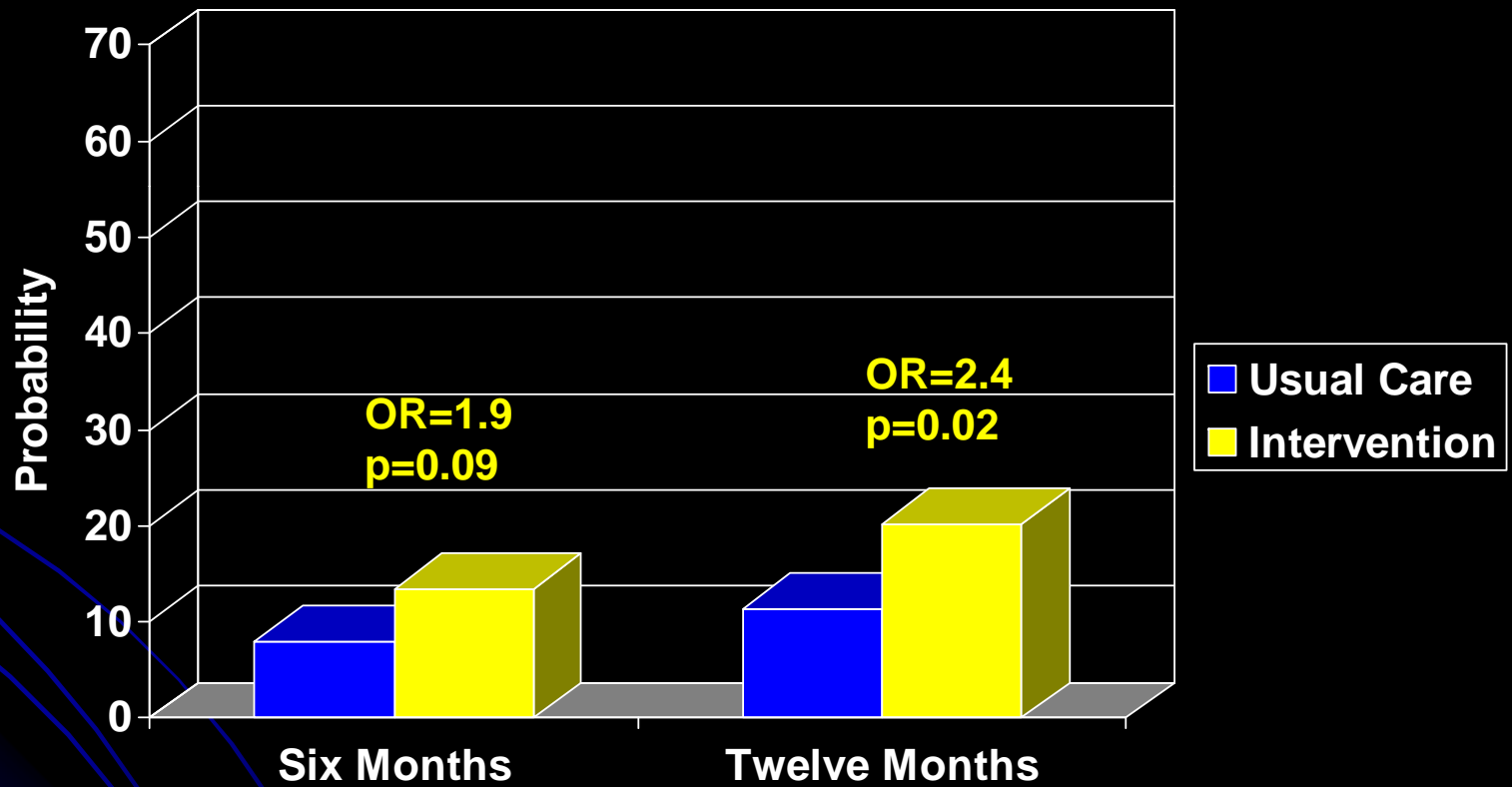
Medication Adherence



Treatment Response



Remission



NIMH OUTREACH Study

- **Objective:** Compare quality and outcomes of telemedicine-based collaborative care to practice-based collaborative care.
- **Study Design**
 - Eight Community Health Centers lacking on-site mental health specialists
 - Screened 17,000 patients
 - Enrolled 336 patients (excluded specialty MH patients)
 - 6, 12 and 18 month follow-ups (92% 6Mo FU rates)
 - Intent to treat analysis

Practiced-Based Collaborative Care Adapted for Rural Primary Care Clinics

- HRSA has launched the Health Disparities Collaboratives in CHCs to enhance their ability to implement **practice-based** chronic care treatment models.
 - Diabetes
 - Cardiovascular disease
 - Asthma
 - Cancer
 - Depression

Advantages and Disadvantages of Telemedicine-Based Collaborative Care

Advantages	Disadvantages
Off-site providers are intensively trained and can specialize in depression care.	Off-site providers may have difficulty establishing a therapeutic alliance with patients.
Off-site providers can devote all of their time to depression care.	Off-site providers do not have access to paper medical records.
Off-site providers have access to MH expertise/supervision.	Off-site providers may have poor communication with PC providers.
Off-site providers can deliver collaborative care with fidelity	Off-site providers cannot integrate depression care with medical care.
Patients have non-stigmatizing access to MH specialists.	Collaborative care might not be well tailored for local preferences.

Intervention Components

Component	Practice-Based	Telemedicine-Based
Provider Education	Yes	Yes
Screening	Yes	Yes
Patient Education	Yes	Yes
Self-Management	Yes	Yes
Medication Assistance	Yes	Yes
Monitoring	Yes	Yes
PharmD Management	No	Yes
Psychotherapy	No	Yes
Psychiatric Consult	No	Yes

Demographic Characteristics

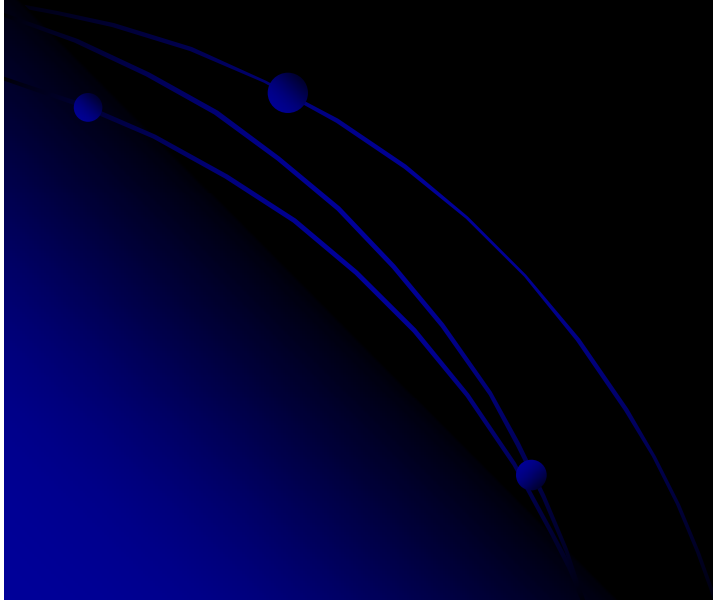
Variable	Mean/Percent, n=364
Age	47.0
Male	18.4%
Caucasian	71.7%
African American	20.9%
Native American	5.0%
Other Race/Ethnicity	2.4%
Married	44.5%
High School Graduate	73.0%
Employed	35.5%
Uninsured	50.8%
Income <\$10,000	29.7%
Income \$10,000-\$20,000	40.0%
Income \$20,000-\$30,000	17.4%
Income >\$30,000	12.9%

Clinical Characteristics

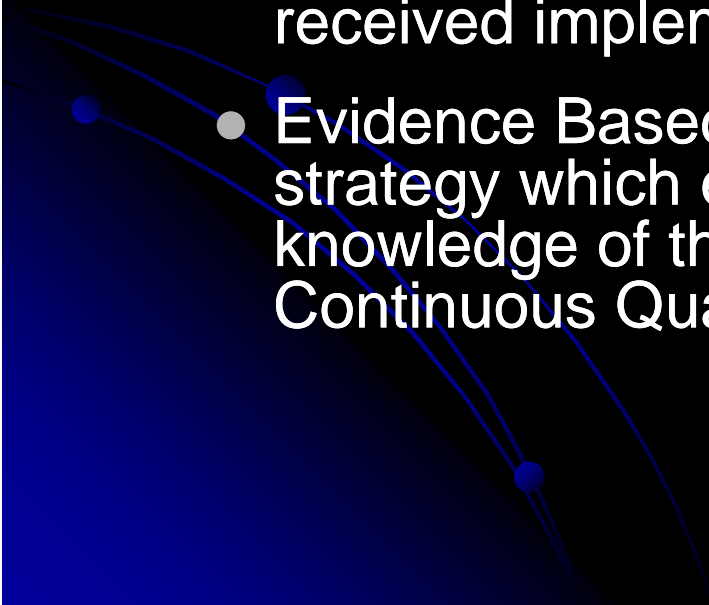
Variable	Mean/Percent, n=364
PHQ Screening Score	15.7
SCL20 Baseline Score	1.9
Current Major Depressive Disorder	83.2%
Prior Depressive Episodes	4.2
Prior Depression Treatment	75.8%
Current Depression Treatment	48.4%
Depression Treatment Acceptable	85.1%
SF12 Physical Component Summary	37.4
SF12 Mental Component Summary	31.4
Chronic Physical Health Conditions	4.6
Current Panic Disorder	8.8%
Current Generalized Anxiety Disorder	62.1%
Current PTSD	15.9%
At-risk drinking	5.5%

Six Month Response and Remission Rates

Results not reported to maintain blinding.



VA Implementation Study of Telemedicine Based Collaborative Care

- **Objective:** Test the effectiveness of Evidence-Based Quality Improvement as an implementation strategy to disseminate telemedicine-based collaborative care.
 - **Study Design**
 - Twenty five CBOCs lacking on site-psychiatrists (nine received implementation intervention)
 - Evidence Based Quality Improvement intervention strategy which embeds outside experts (with knowledge of the evidence-base) into local Continuous Quality Improvement efforts.
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Diffusion of Collaborative Care

- Intervention Attributes Impacting Diffusion¹:
 - relative advantage
 - compatibility
 - complexity
 - observability
 - trialability

1) Rogers EM. *Diffusion of Innovations*. 4th ed. New York, NY: The Free Press; 1995.

Intervention Strategy¹

Evidence Based Quality Improvement

- Outside experts with knowledge of EBP and implementation strategies.
- Local experts with knowledge of local needs and resources
- Plan-Do-Study-Act
- Web-based decision support system (NetDSS) to maintain fidelity

1. Fortney J, et. al. Steps for Implementing Collaborative Care Programs for Depression, *Population Health Management*, Volume 12, Number 2, 2009.

NetDSS - <https://www.netdss.net/>

- NetDSS has the following functional capabilities:
 - patient registry and panel management
 - trial and phase management
 - encounter scheduler
 - decision support
 - progress note generator
 - Workload/Outcomes report generator
- NetDSS guides the care manager through a **self-documenting** and **evidence-based** patient encounter using scripts and self-scoring instruments which support:
 - patient education and activation
 - barrier assessment
 - comorbidity assessment
 - depression severity monitoring
 - suicide risk assessment
 - adherence monitoring
 - side-effect monitoring
 - self-management activities

Patient Flow and Outcomes

● Consults Received	254	(100%)
● Enrolled Patients	128	(50%)
● Not lost to follow-up	109	(85%)
● Still Active	54	(50%)
● <u>Disenrolled</u>	<u>55</u>	<u>(50%)</u>
● Responded and completed	17	(31%)
● Referred to MH	16	(29%)
● Disenrolled at PCP's request	1	(2%)
● Disenrolled at Patients request	11	(20%)
● No longer eligible	6	(11%)
● Other	4	(7%)

Fidelity

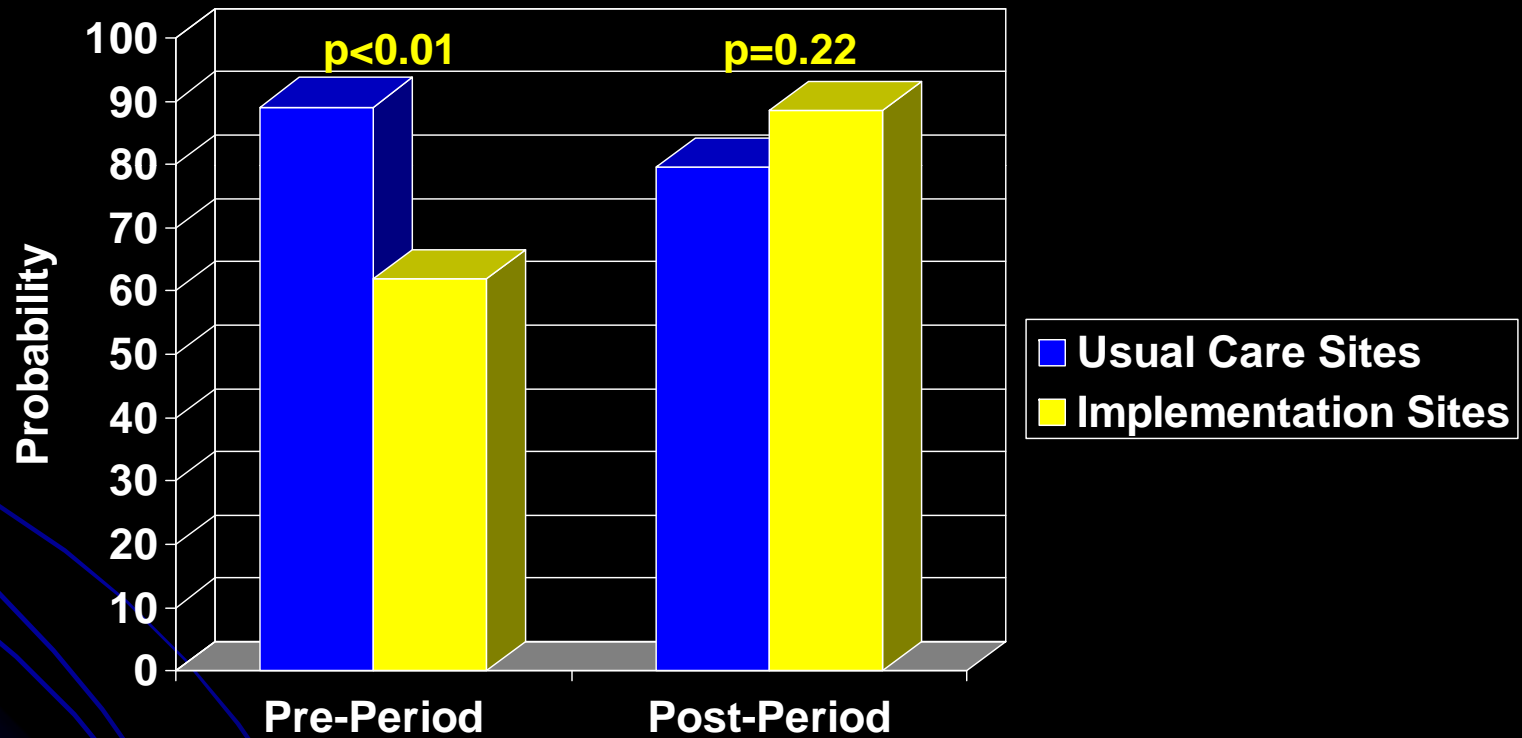
- Initial Encounters

- Average days between consult and initial encounter - 10 days
- Depression severity assessed with PHQ9 – 100%
- Average PHQ9 score at initial encounter – 11
- Education provided - 100%
- Barriers assessed/addressed - 95%
- Self management goals set - 96%

- Follow-up Encounters (acute phase of treatment)

- Average days between encounters – 20 days
- Medication adherence assessed - 100%
- Side-effects assessed - 99%
- Depression severity assessed with PHQ9 - 100%
- Suicide risk assessed - 2% (100% of patients reporting suicide ideation on PHQ9).

Medication Possession Performance Measure



Implementation Observations

- Team meetings with care manager and tele-psychiatrist were key to success
- Psychiatric supervision was feasible because care manager was co-located with psychiatrist at VAMC instead of co-located with primary care provider at CBOC.
- Tele-psychiatrist supervision facilitated the transition to specialty mental health care (e.g., tele-psychiatry clinic) for patients failing treatment.
- Enabled tele-psychiatrist to decide which patients needed referral and when.