

Perinatal Depression: Where We Should Be and How We Should Get There

Emily S Miller, MD MPH

Assistant Professor

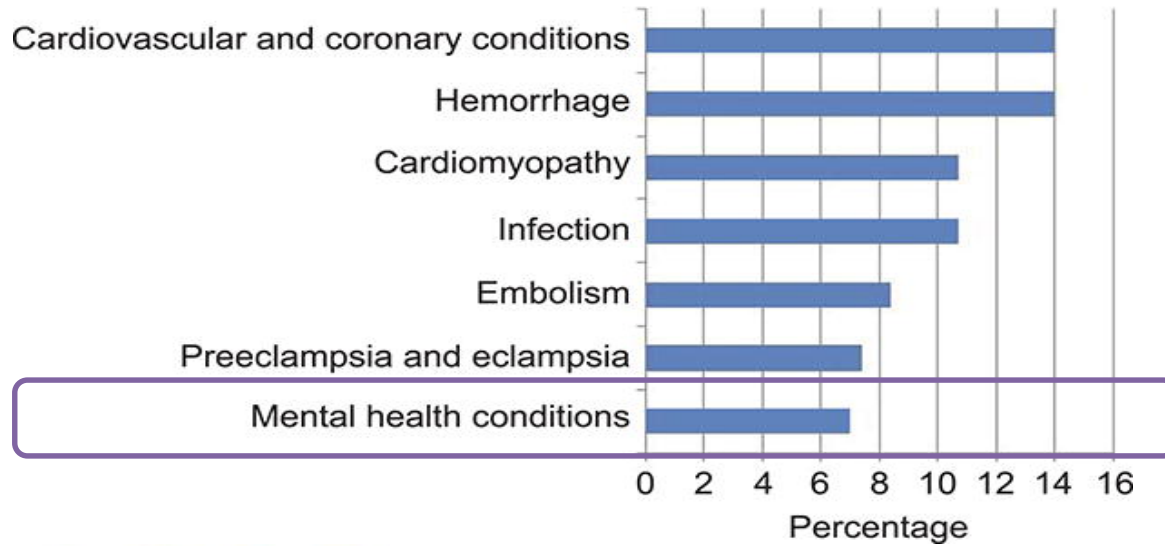
Department of Obstetrics & Gynecology

Division of Maternal Fetal Medicine

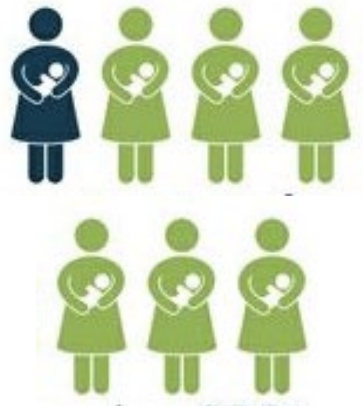
Northwestern

No disclosures

Perinatal Depression



Maternal Risks



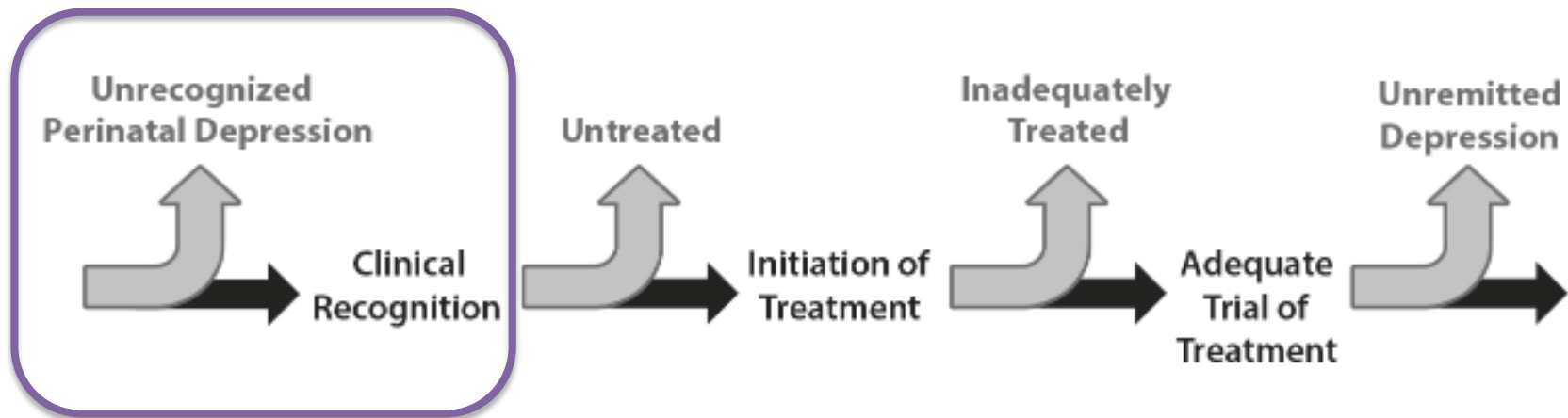
Risks to Infants



Objectives

- Describe the perinatal depression treatment cascade and contemporary mental health outcomes
- Understand the evidence to support efficacy of perinatal collaborative care
- Review implementation strategies for perinatal collaborative care at MetroHealth

Perinatal Depression Treatment Cascade



Audience Question

What percentage of women with perinatal depression in the US with achieve remission of their symptoms?

A: 3-5%

B: 18-20%

C: 38-40%

D: 53-55%

Clinical Recognition



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

ACOG COMMITTEE OPINION

Number 757

(Replaces Committee Opinion No. 630, May 2015)

Committee on Obstetric Practice

This Committee Opinion was developed by the American College of Obstetrician

INTERIM UPDATE: This Committee Opinion is updated as highli
language and supporting evidence regarding prevalence, benefi

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

Guidance for the Clinician in
Rendering Pediatric Care

Screening for Perinatal Depres

Clinical Report—Incorporating Recognition and artum Depression



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS



Society for
Maternal-Fetal
Medicine
High-risk pregnancy experts

Obstetric Care Consensus | #8

smfm.org

Interpregnancy Care



This document is endorsed by the American College of Nurse-Midwives and the National Association of Nurse Practitioners in Women's Health. This document was developed by the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine in collaboration with Judette Marie Louis, MD, MPH; Allison Bryant, MD, MPH; Diana Ramos, MD, MPH; Alison Stuebe, MD, MSc; and Sean C. Blackwell, MD

Special Communication | **USPSTF RECOMMENDATION STATEMENT**

Screening for Depression in Adults

US Preventive Services Task Force Recommendation Statement



Perinatal Obstetric Office Depression Screening and Treatment: Implementation in a Health Care System

Tracy Flanagan, MD^a and Lyndsay A. Avalos, PhD, MPH^b

^aThe Permanente Medical Group, Regional Offices, Kaiser Permanente Northern California, Oakland, California

^bDivision of Research, Kaiser Permanente Northern California, Oakland, California

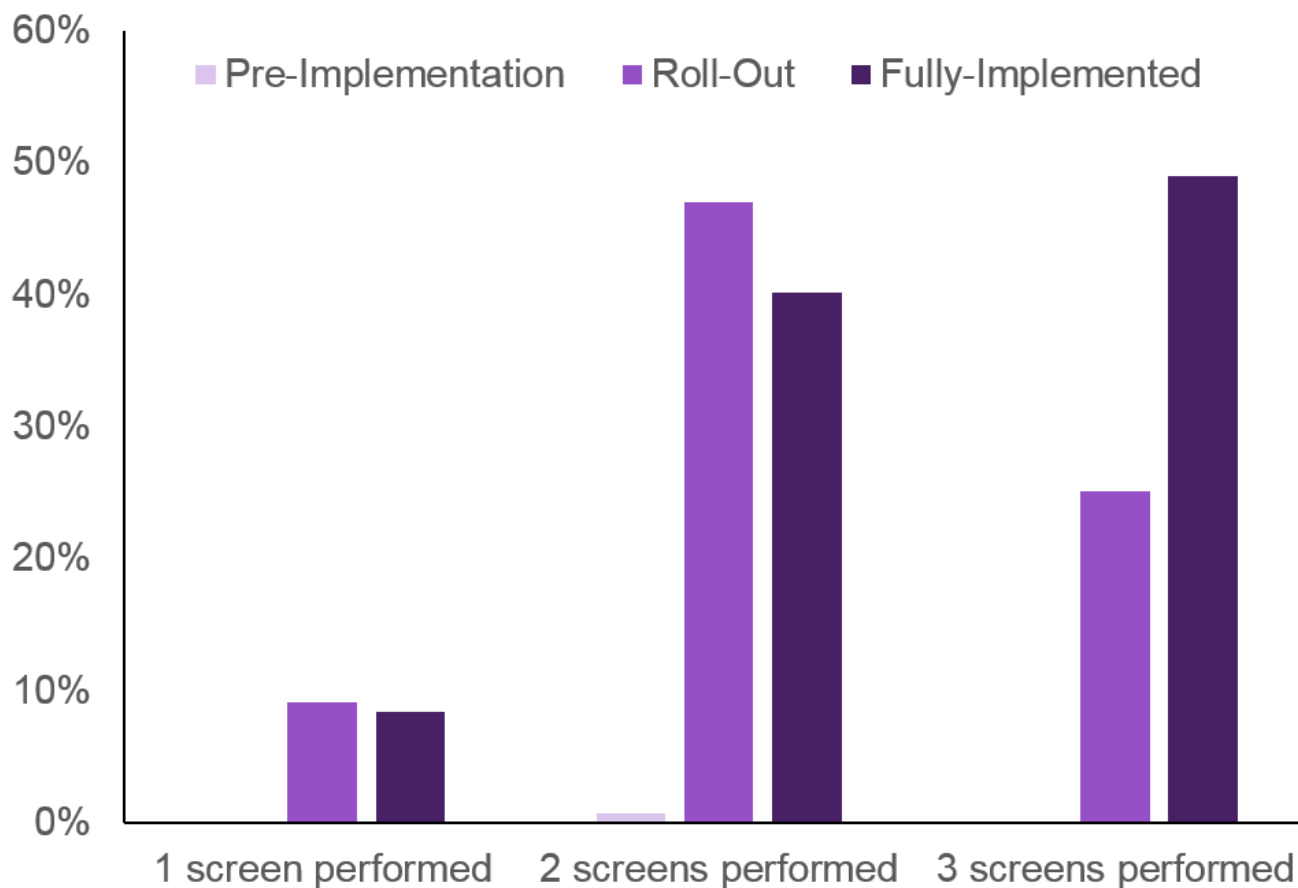
- Identification of a site physician lead
- Formation of a Task Force for planning/oversight
- Collaboration with Behavioral Health/Psychiatry
- Screening incorporated into prenatal office workflow
- Education of clinicians about perinatal depression
- Staff orientation to workflow processes

Improved Perinatal Depression Screening, Treatment, and Outcomes With a Universal Obstetric Program

Lyndsay A. Avalos, PhD, MPH^a, Tina Raine-Bennett, MD, MPH^a, Hong Chen, MPH^a, Alyce S. Adams, PhD^a, and Tracy Flanagan, MD^b

^aDivision of Research, Kaiser Permanente Northern California, Oakland, California

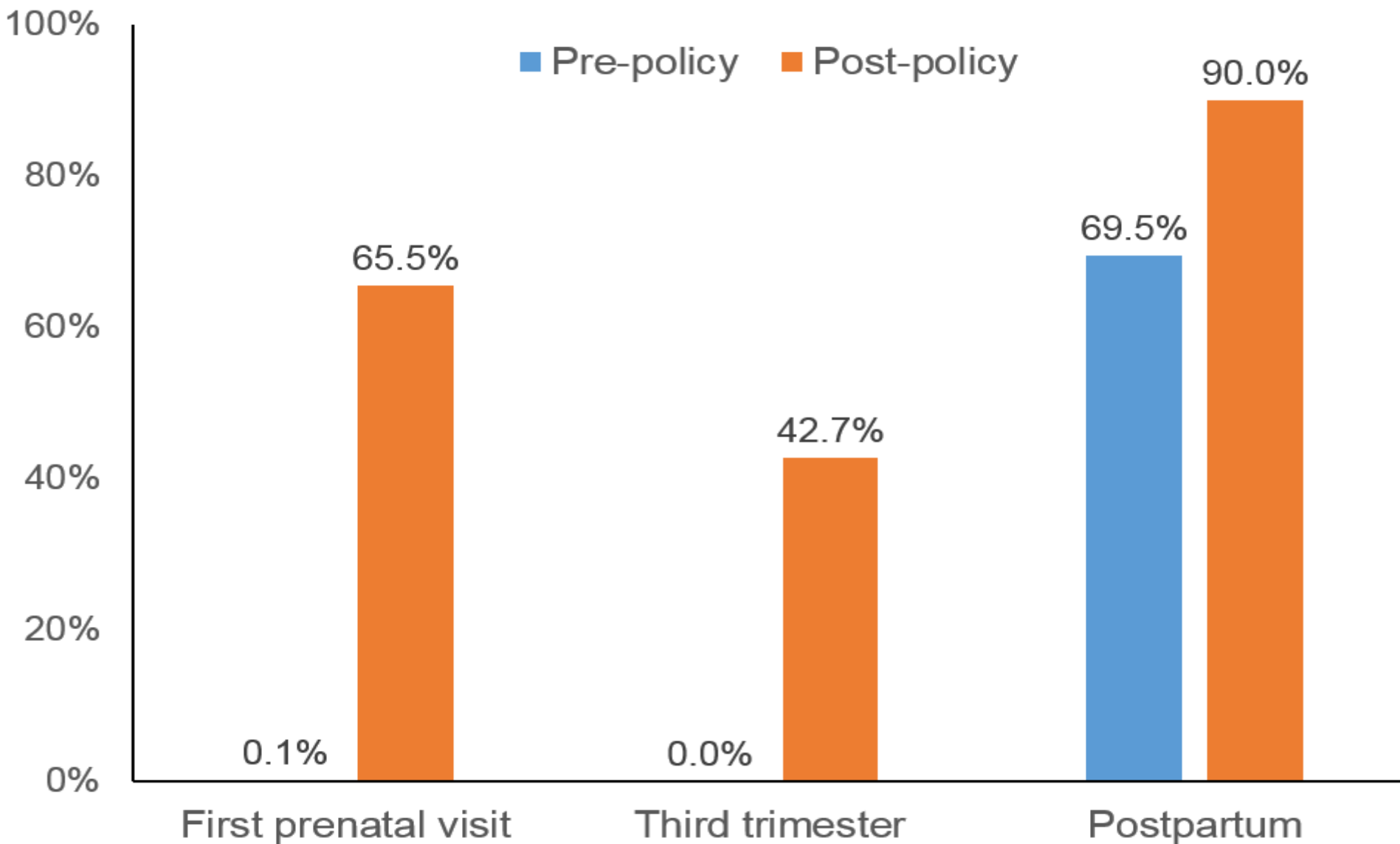
^bThe Permanente Medical Group, Regional Offices, Kaiser Permanente Northern California, Oakland, California



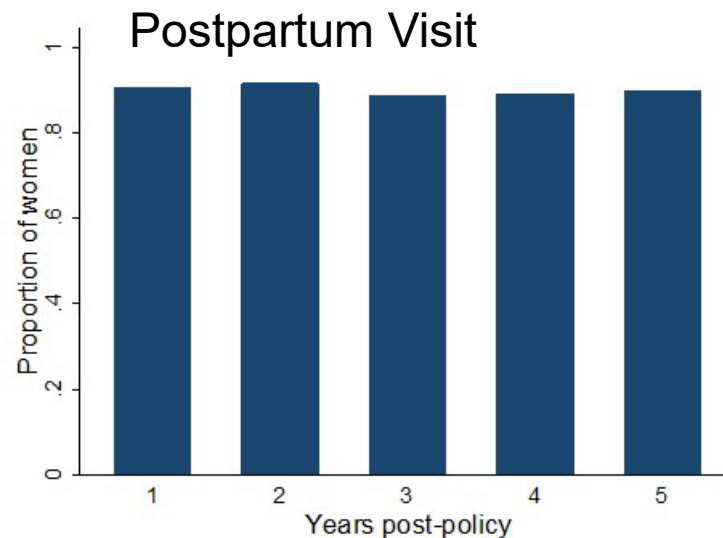
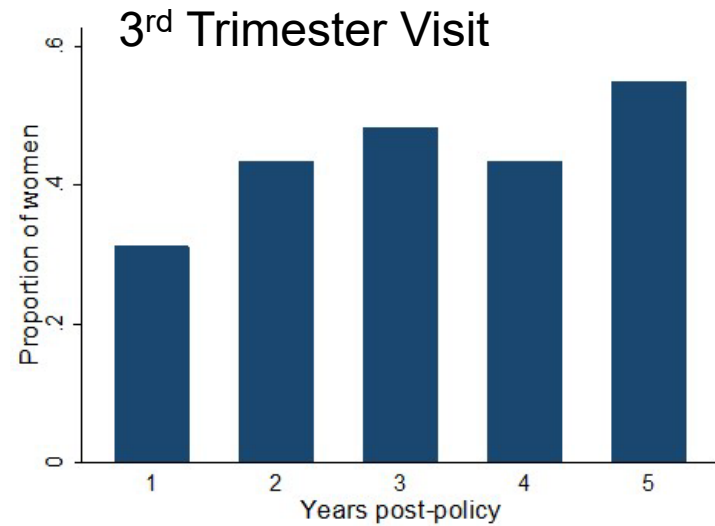
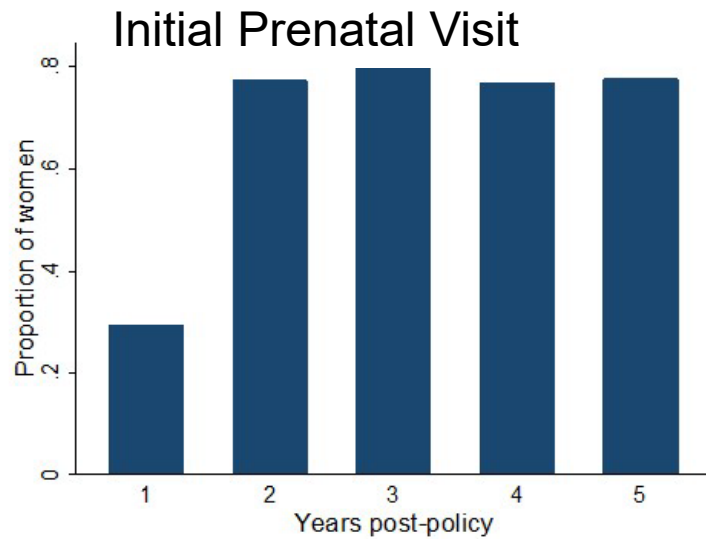
Prentice: Clinical Recognition

- Perinatal Mental Health Disorders Prevention and Treatment Act (405 ILCS 95/1)
- Prentice screening recommendations:
 - First prenatal visit
 - 3rd trimester
 - Postpartum

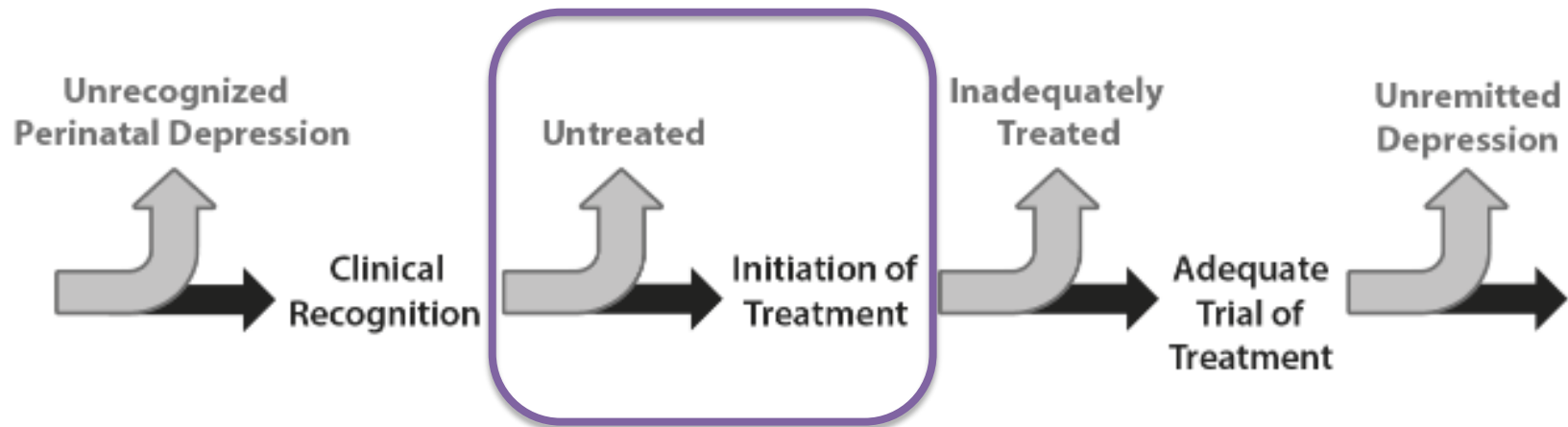
Prentice: Clinical Recognition



Prentice: Clinical Recognition



Perinatal Depression Treatment Cascade

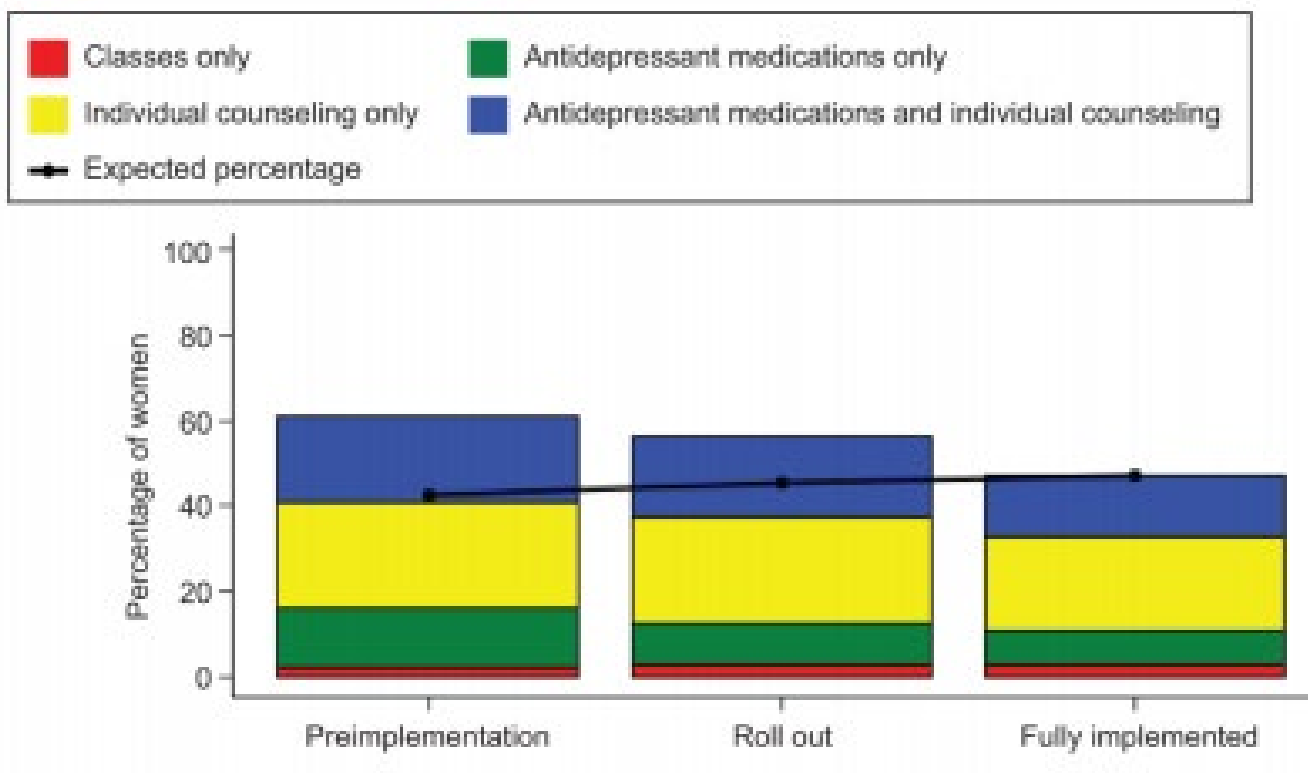


Improved Perinatal Depression Screening, Treatment, and Outcomes With a Universal Obstetric Program

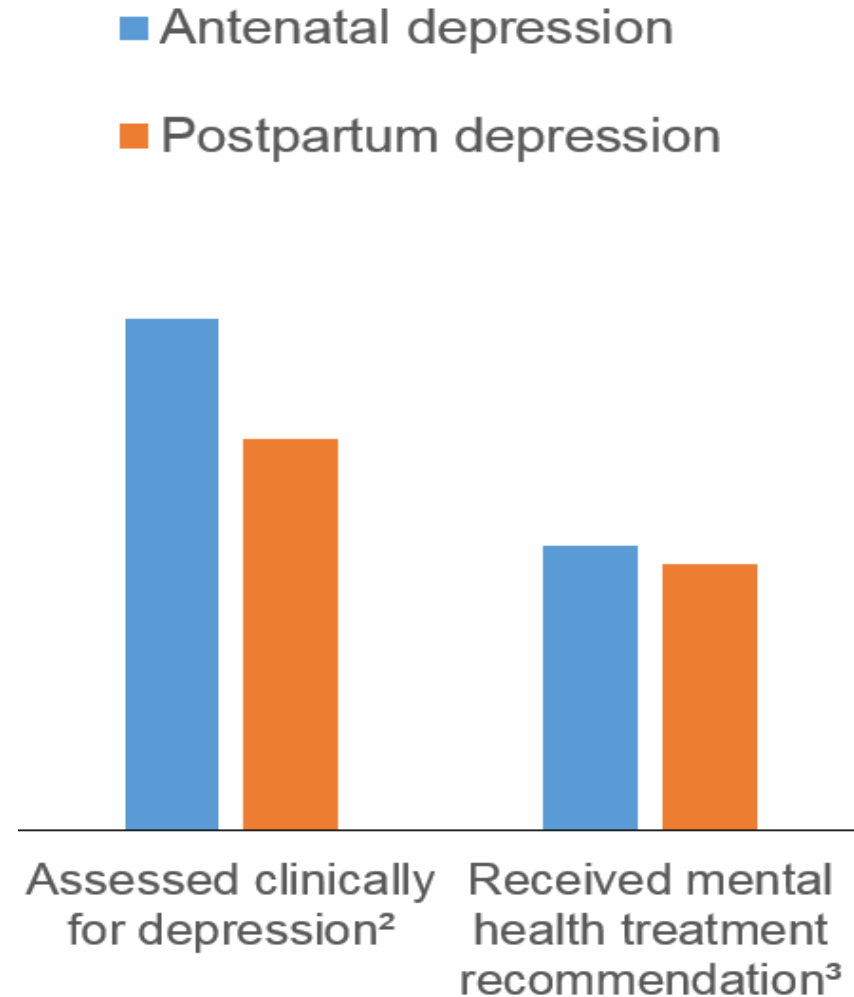
Lyndsay A. Avalos, PhD, MPH^a, Tina Raine-Bennett, MD, MPH^a, Hong Chen, MPH^a, Alyce S. Adams, PhD^a, and Tracy Flanagan, MD^b

^aDivision of Research, Kaiser Permanente Northern California, Oakland, California

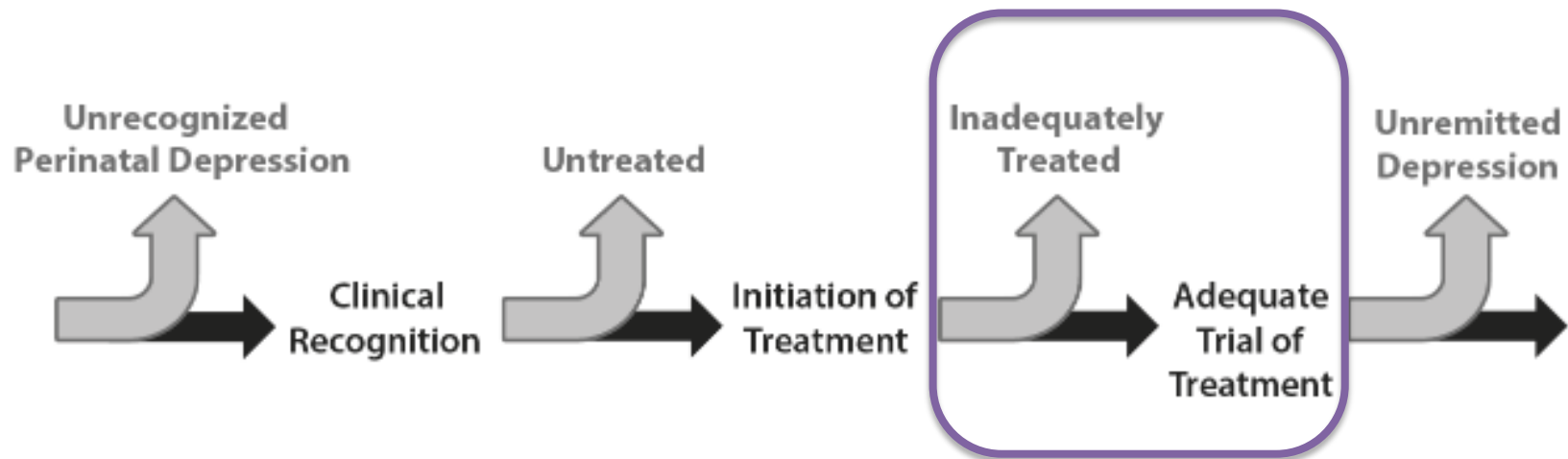
^bThe Permanente Medical Group, Regional Offices, Kaiser Permanente Northern California, Oakland, California



Prentice: Initiation of Treatment



Perinatal Depression Treatment Cascade

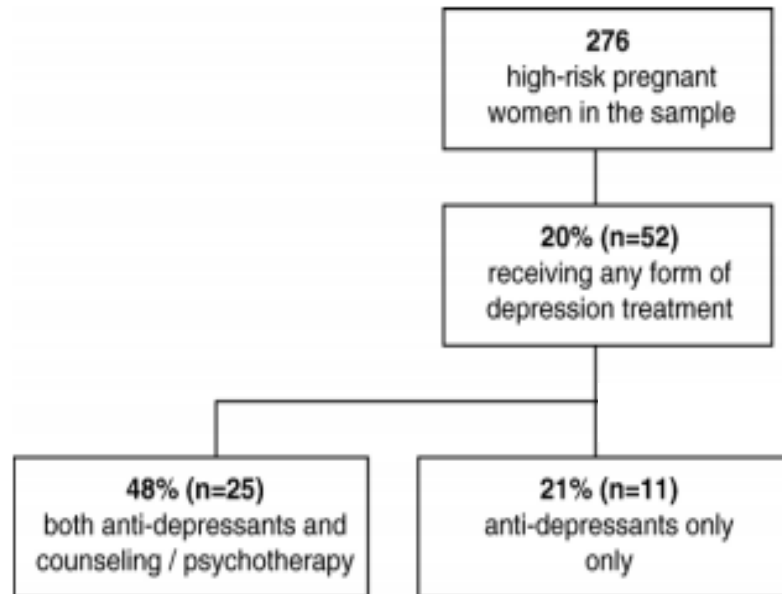


Rates and predictors of depression treatment among pregnant women in hospital-affiliated obstetrics practices

Heather A. Flynn, Ph.D.^{a,*}, Frederic C. Blow, Ph.D.^{a,b}, Sheila M. Marcus, M.D.^a

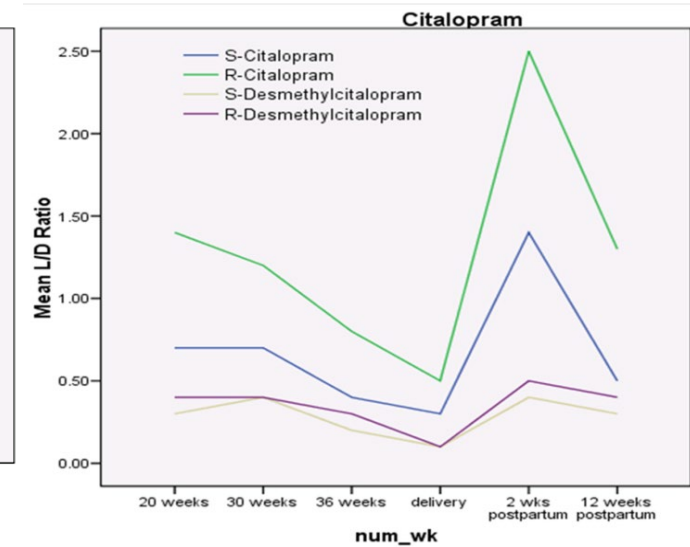
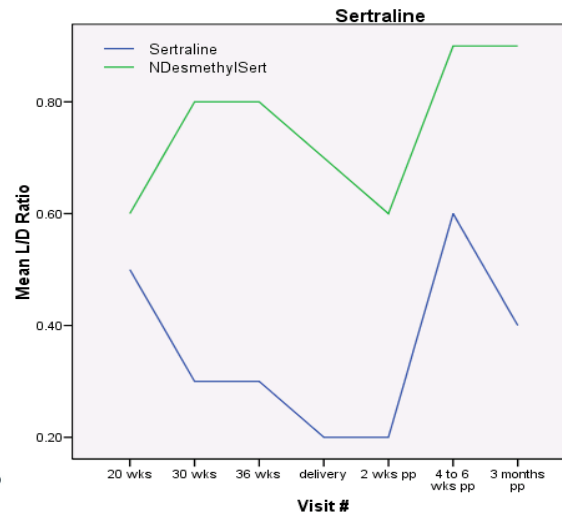
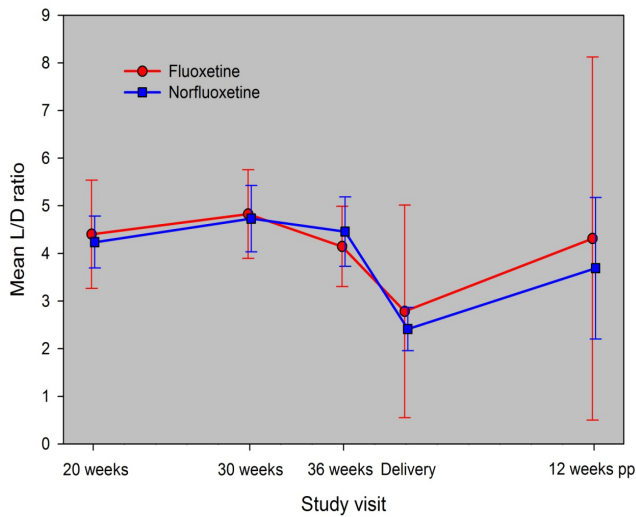
^aUniversity of Michigan Medical School, Ann Arbor, MI 48105, USA

^bSerious Mental Illness Treatment Research and Evaluation Center (SMITREC), Health Services Research and Development (HSR&D), Department of Veterans Affairs Medical Center, Ann Arbor, MI 48105, USA



Adequate anti-depressant use: Receiving at least 6 weeks of daily use of antidepressants at the recommended starting dose or more

Adequate Trial of Treatment

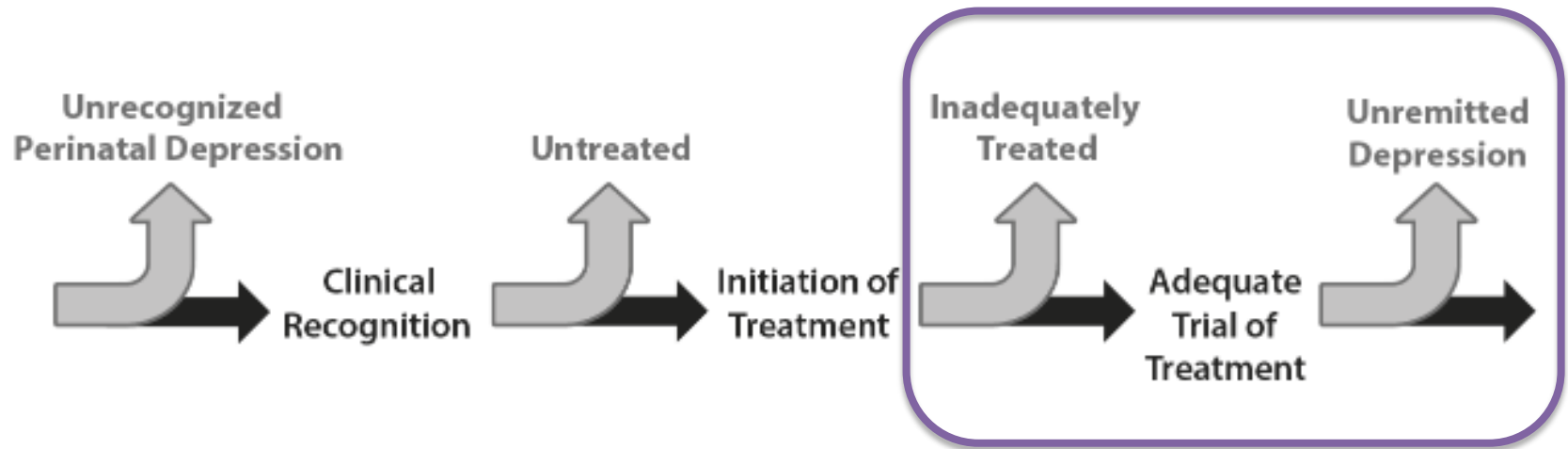


Adequate Trial of Treatment

SERTRALINE
mg/day,
N=24
% remitted

<100mg	100mg	125-150mg	200mg
1 (4%)	12 (50%)	4 (17%)	7 (29%)

Perinatal Depression Treatment Cascade



The Perinatal Depression Treatment Cascade: Baby Steps Toward Improving Outcomes

Elizabeth Q. Cox, MD^{a,*}; Nathaniel A. Sowa, MD, PhD^a; Samantha E. Meltzer-Brody, MD, MPH^a; and Bradley N. Gaynes, MD, MPH^a



Figure 4. Analysis of Studies of Perinatal Depression Remission

Antenatal

Therapy

	Mean	95% CI
Grote et al ³⁵	95.0	85.9–104.1
Spinelli ³⁶	100	NA
Spinelli and Endicott ³⁷	19.0	2.2–35.8
Spinelli et al ³⁸	41.9	27.1–56.6
Weighted mean (n = 99)	56.5	48.5–64.4

Postpartum

Therapy

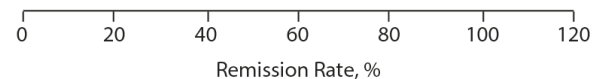
	Mean	95% CI
Bloch et al ⁴³	50.0	28.1–71.9
Chabrol et al ⁴⁴	71.4	52.1–90.8
Cooper et al (CBT) ⁴⁵	57.0	42.0–72.0
Cooper et al (psychodynamic) ⁴⁵	71.0	57.7–84.3
Cooper et al (counseling) ⁴⁵	54.0	39.9–68.1
Freeman and Davis ⁴⁶	31.4	19.6–43.2
Klier et al ⁴⁷	58.8	35.4–82.2
O'Hara et al ⁴⁹	43.5	23.2–63.7
Mulcahy et al ⁴⁸	31.7	19.9–43.5
Reay et al ⁵⁰	50.0	26.9–73.1
Stuart and O'Hara ⁵¹	100	NA
Wickberg and Hwang ⁵²	80.0	59.8–100.2
Weighted mean (n = 374)	51.2	49.1–53.2

Medications

Cohen et al ⁵³	80.0	59.8–100.2
Nonacs et al ⁵⁴	37.5	4.0–71.0
Stowe et al ⁵⁵	53.8	34.6–73.0
Suri et al (2001) ⁵⁶	66.7	29.0–104.4
Suri et al (2005) ⁵⁷	75.0	32.6–117.4
Wisner et al ⁵⁸	46.8	37.4–56.2
Yonkers et al ⁵⁹	37.0	18.4–55.6
Weighted mean (n = 209)	49.8	49.0–50.6

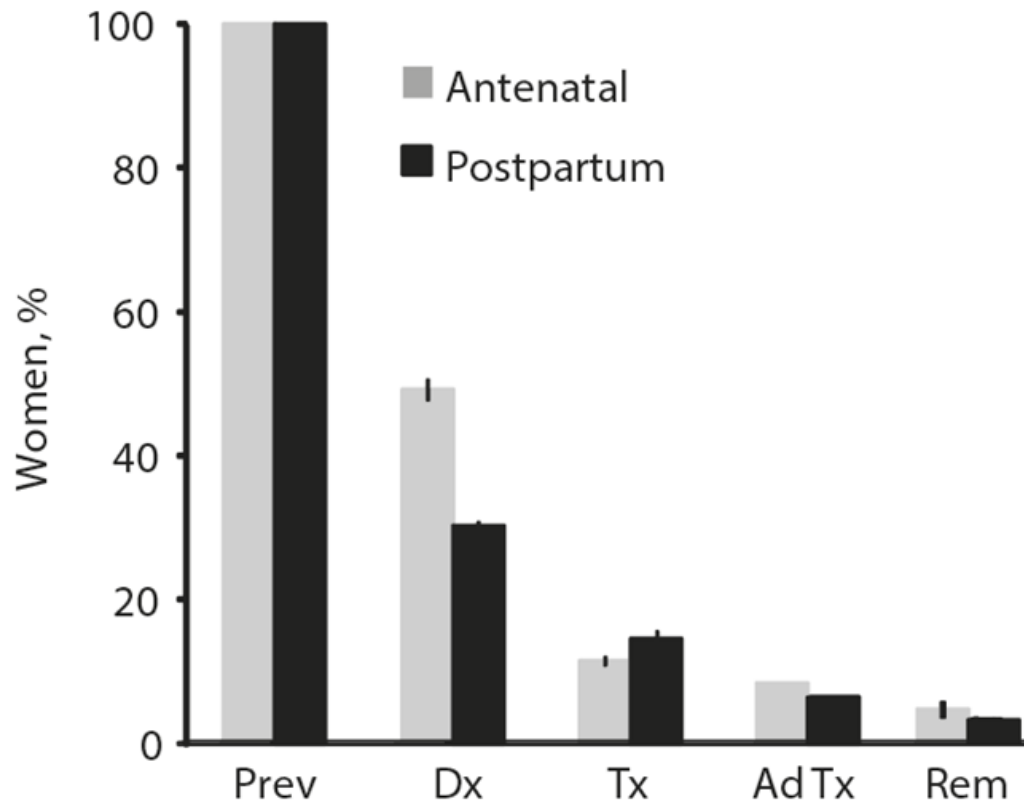
Therapy and Medications

Bloch et al ⁴³	65.0	44.1–85.9
Total weighted mean (n = 583)	51.2	48.6–53.8

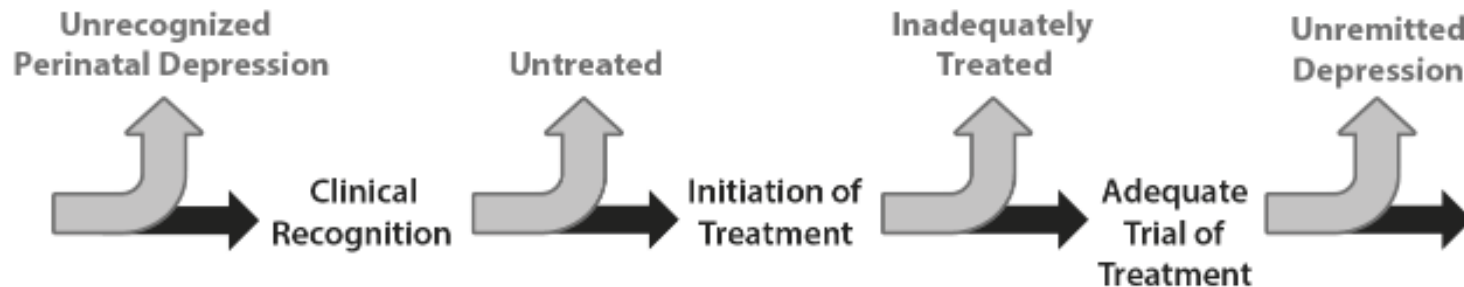


Abbreviations: CBT = cognitive-behavioral therapy, CI = confidence interval, NA = not applicable.

A. Women With Depression



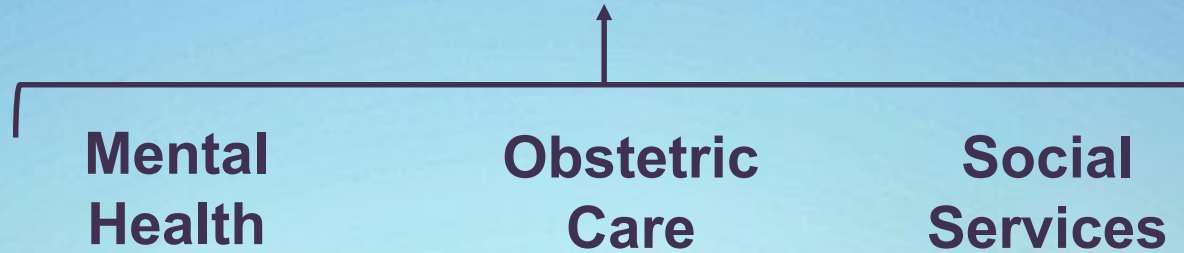
Abbreviations: Ad Tx = adequate trial of treatment, Dx = diagnosis, Prev = prevalence, Rem = remission, Tx = treatment



Objectives

- Describe the perinatal depression treatment cascade and contemporary mental health outcomes
- Understand the evidence to support efficacy of perinatal collaborative care
- Review implementation strategies for perinatal collaborative care at MetroHealth

Collaborative Care



Degrees of Integration



- Co-exist
- Most Common



- Consult
- Helpful



- Co-location
- Better



- Collaborate
- IDEAL

“None of us is smart as all of us”

Core Principles of Collaborative Care



- Patient centered team care



- Population-based care



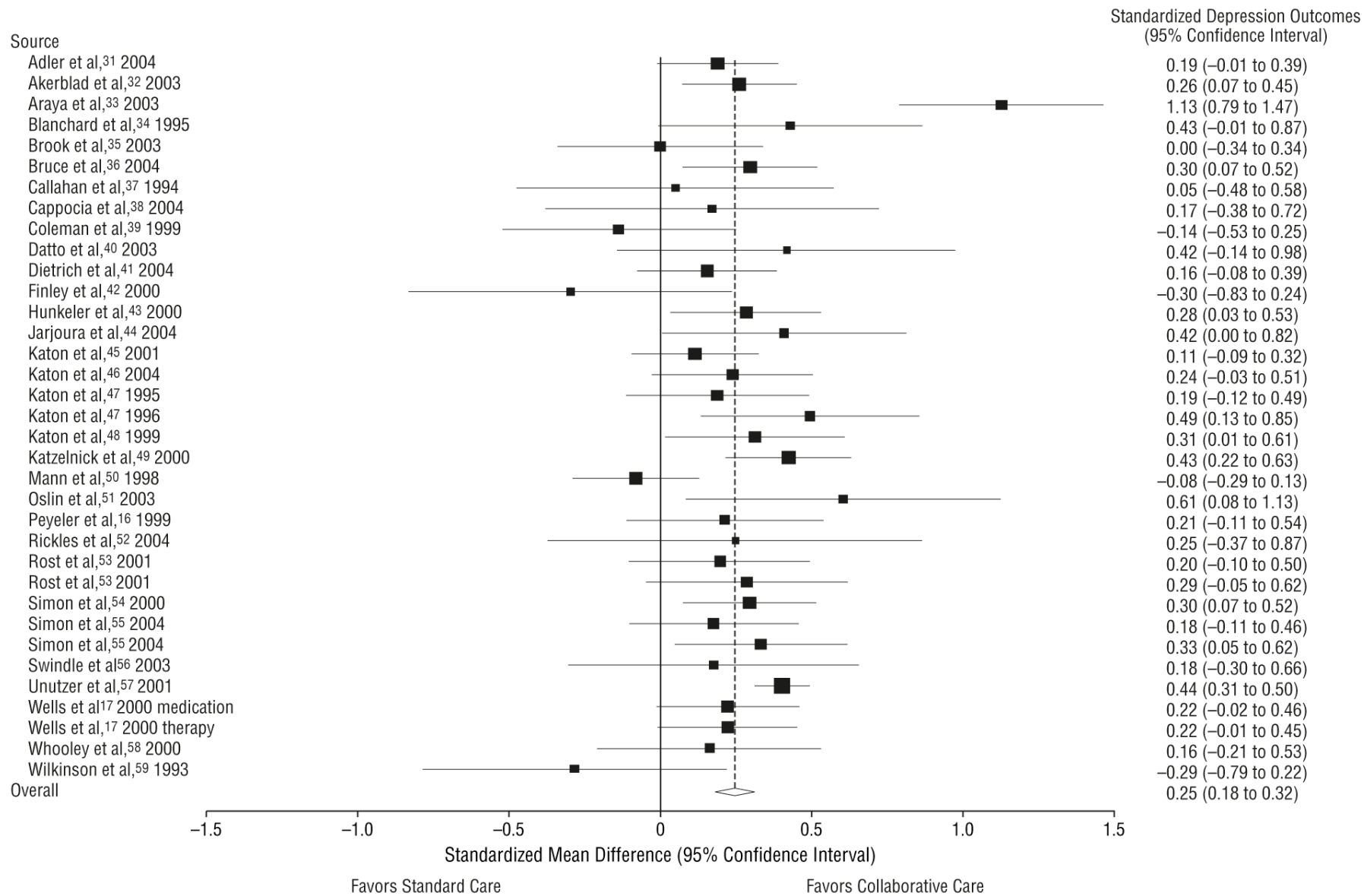
- Measurement-based treatment to target



- Evidence-based care



- Accountable care



What about Perinatal Collaborative Care?

Primary Care

- Longitudinal relationship with clinician
- Depression more often seen as within scope of clinician
- Care focused on individual patient
- Multiple visits
- Lower prevalence rates

Perinatal Care

- Multiple care transitions
- More specifically defined scope of care
- Competing demands of patient + fetus/child
- Postpartum care = one clinician visit
- Higher prevalence rates

COLLABORATIVE CARE FOR PERINATAL DEPRESSION IN SOCIOECONOMICALLY DISADVANTAGED WOMEN: A RANDOMIZED TRIAL

Nancy K. Grote, Ph.D.,^{1*} Wayne J. Katon, MD,² Joan E. Russo, Ph.D.,² Mary Jane Lohr, MS,¹
Mary Curran, MSW,¹ Erin Galvin, MSW,¹ and Kathy Carson, B.S.N.³

MOMCare + MSS-Plus

N=83

MSS-Plus

N=81

Educational depression materials

Case management

Notification of MSS social worker or OB provider

Pre-treatment engagement session

IPT or antidepressant

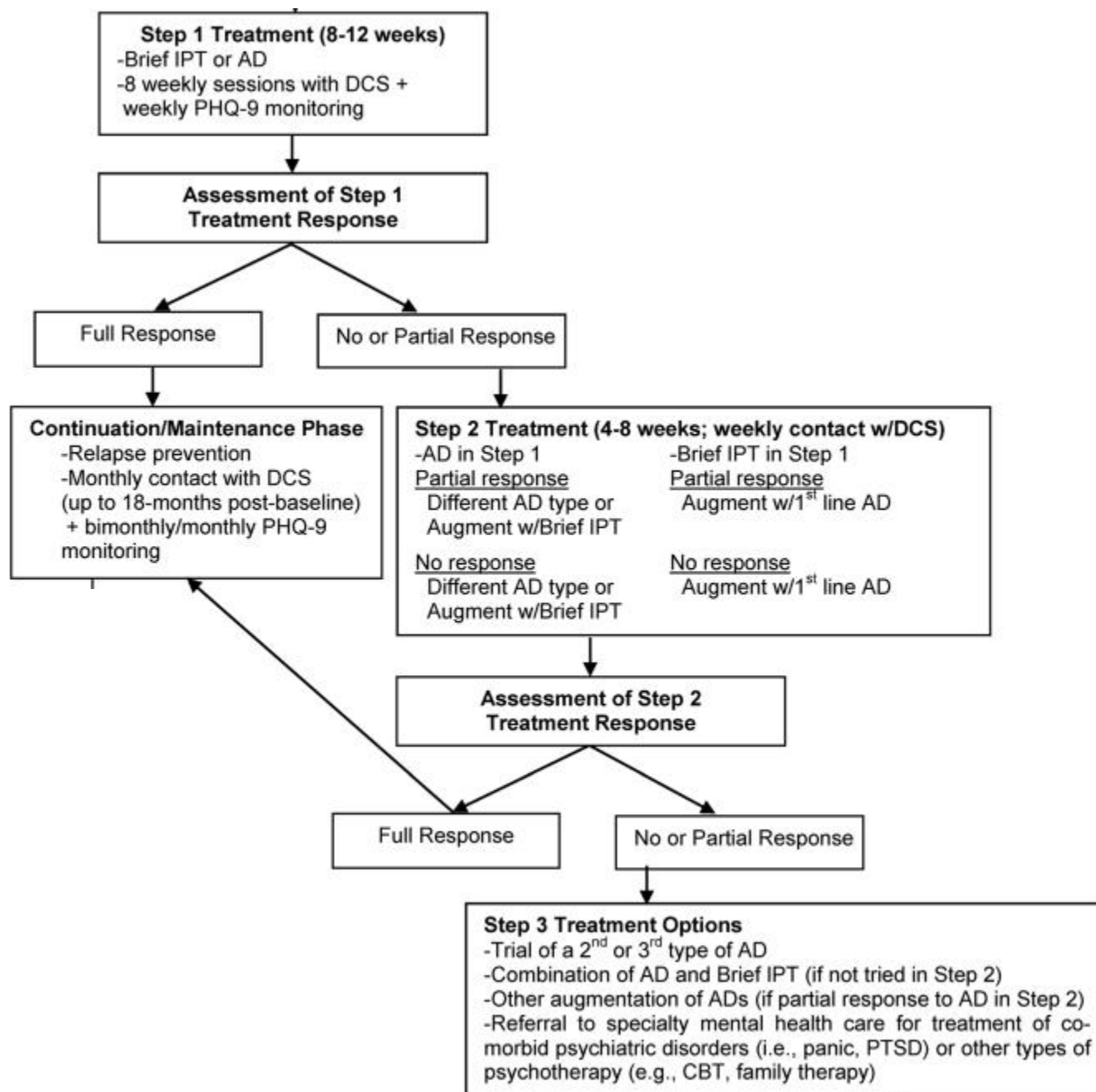
Collaboration with OB provider

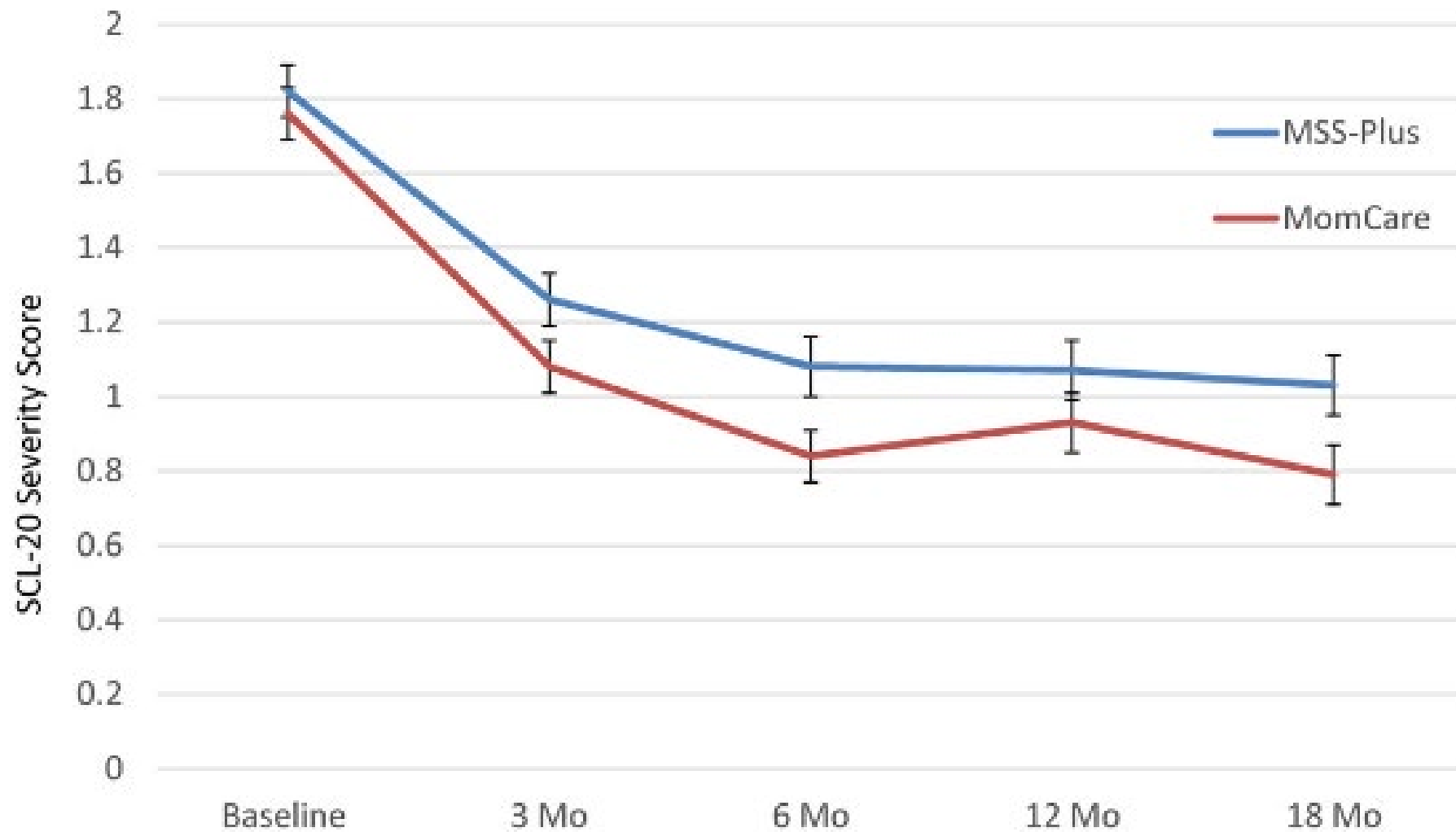
Stepped care

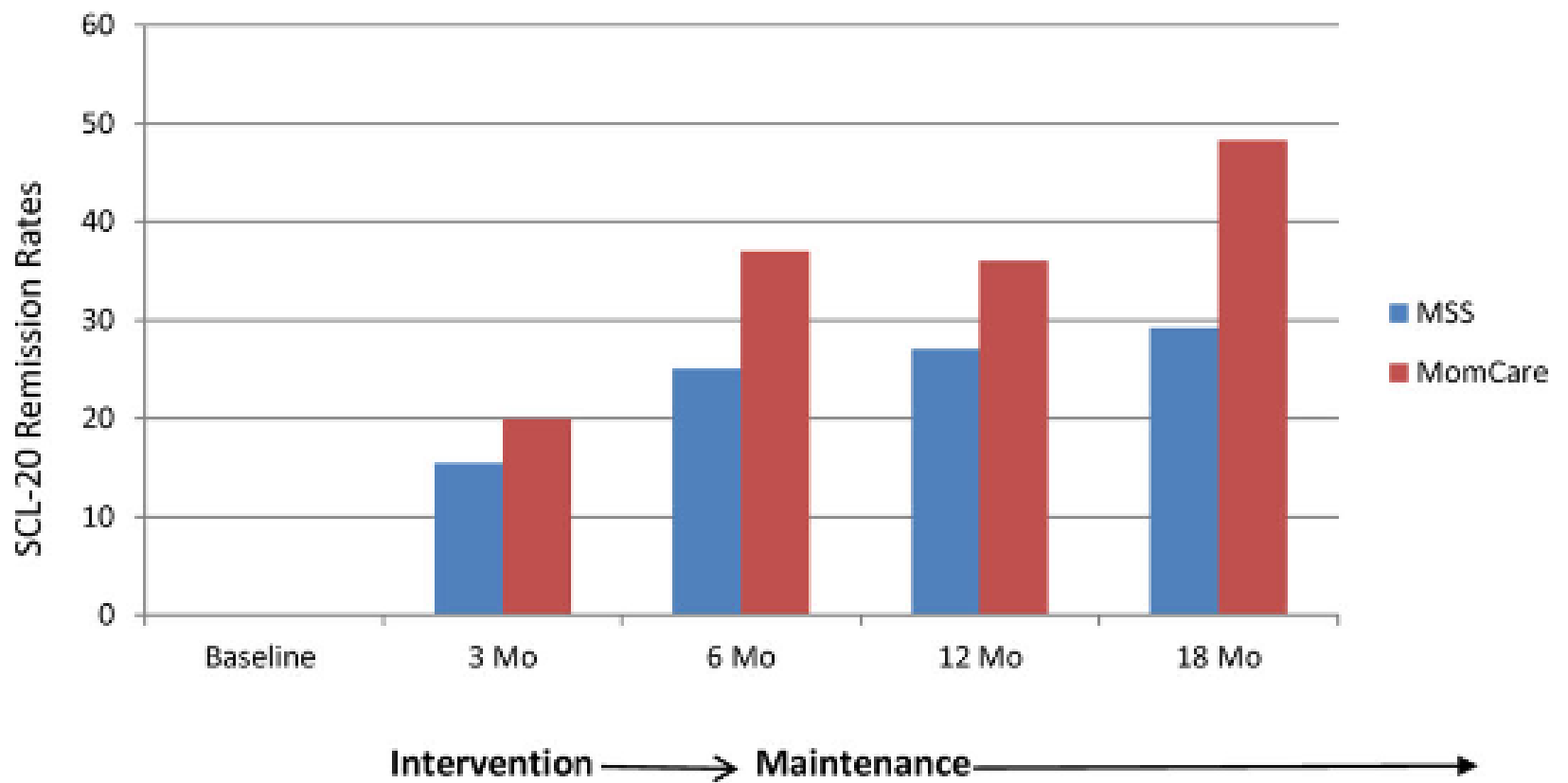
Referral for depression care

Masked outcome assessments:

3, 6, 12, 18 months post-baseline









Improving Care for Depression in Obstetrics and Gynecology: A Randomized Controlled Trial

Jennifer L. Melville, MD, MPH¹, Susan D. Reed, MD, MPH², Joan Russo, PhD³, Carmen A. Croicu, MD^{3,4}, Evette Ludman, PhD⁵, Anna LaRocco-Cockburn, MSW, MPH³, and Wayne Katon, MD³

12 months of Collaborative Care Depression Management

N=102

Educational depression materials

Collaborative care

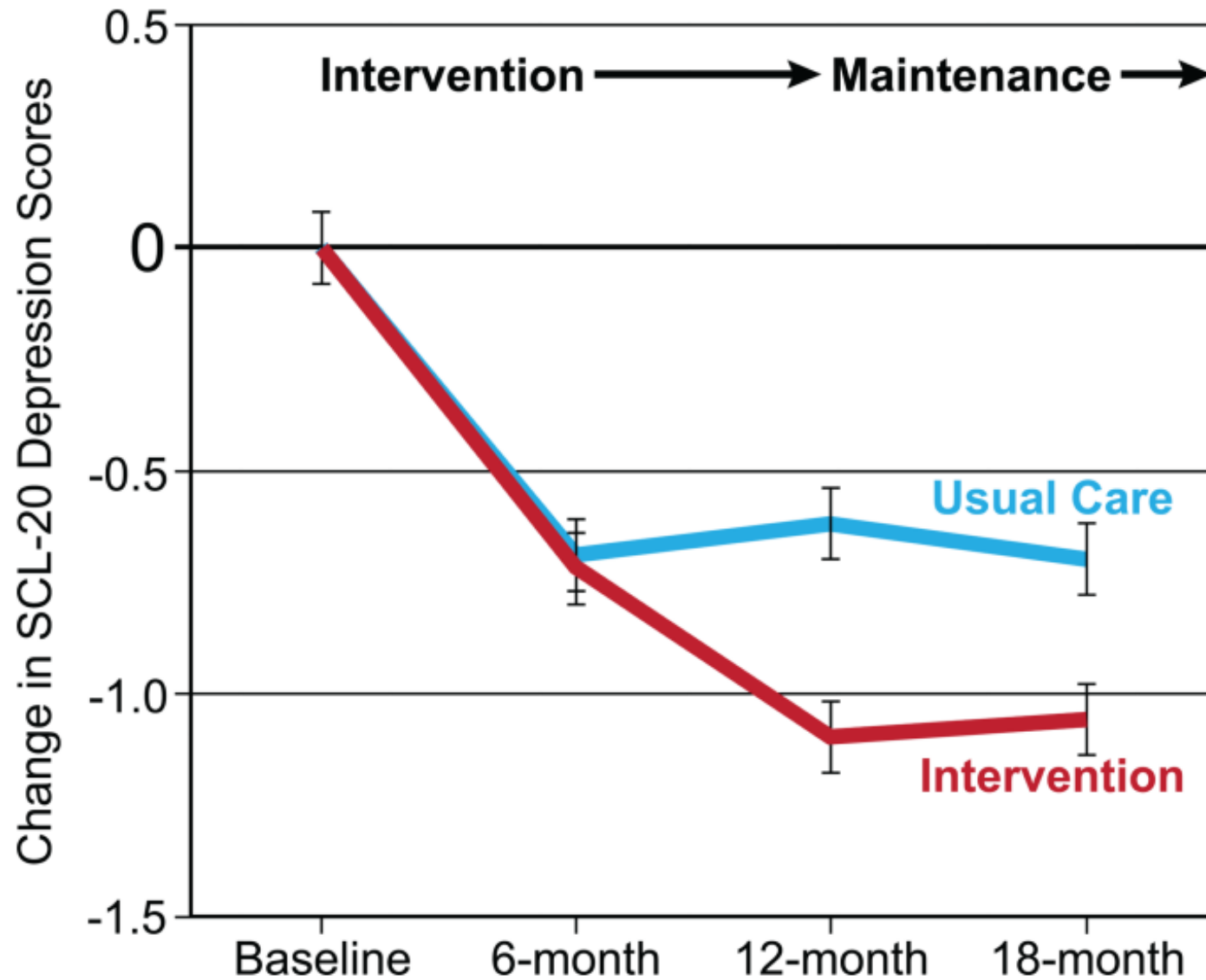
- Initial engagement session
- Proactive outreach for missed sessions
- Depression care managers
- Multi-disciplinary weekly meetings

Treatment as Usual

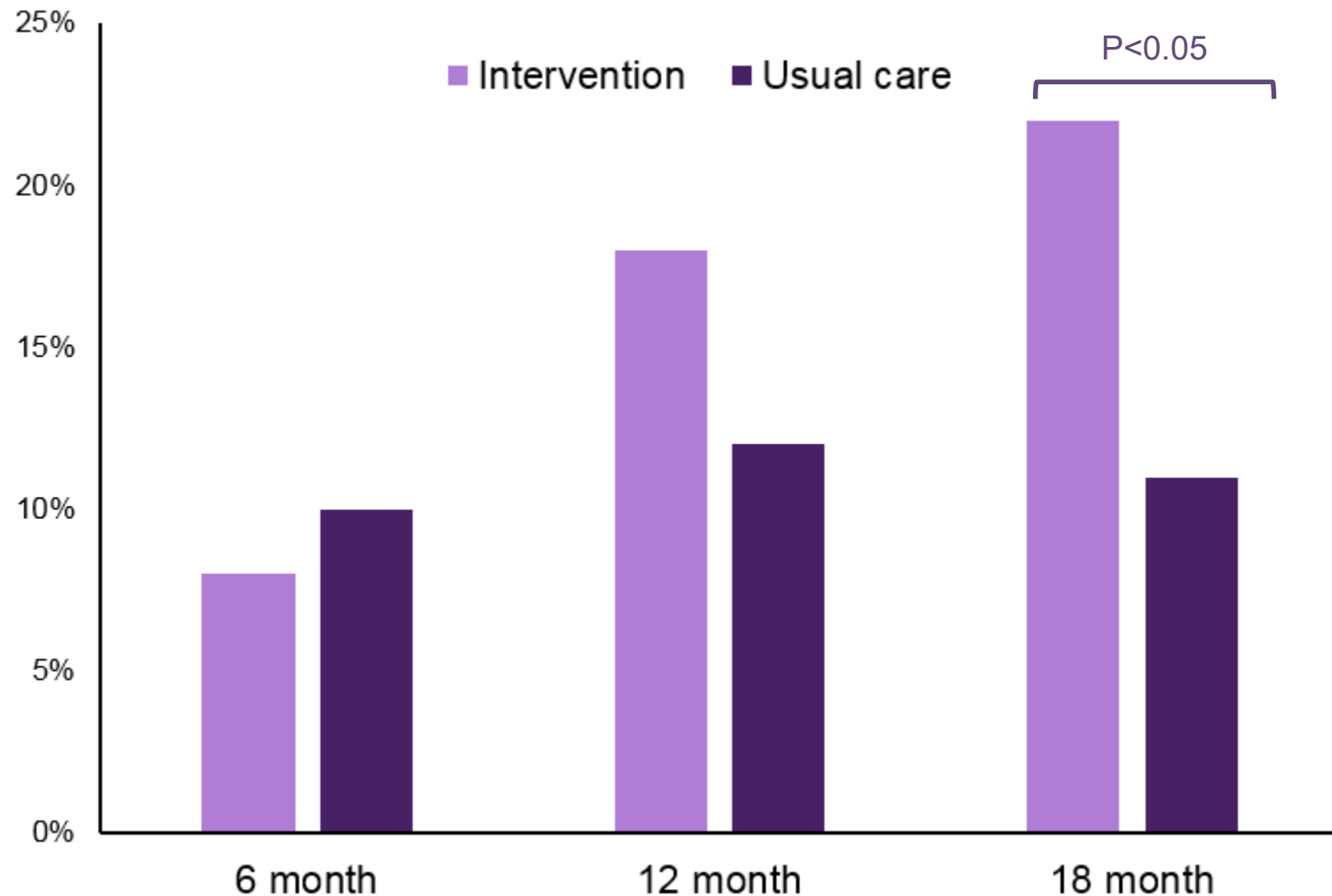
N=103

Informed of diagnosis
Depression education booklet
Referral to community
OB provider notified

Masked outcome assessments:
6, 12, 18 months post-baseline



Complete remission of depression symptoms (SCL-20 < 0.5)



Gaps in Evidence

- Somatic benefits
 - Reduction in adverse pregnancy outcomes
- Implementation
 - Efficacy vs effectiveness
 - Guidelines for implementation

Somatic Benefits

Table 5: Meta-analysis of associations between depression and incident somatic disease

Incident event	Reference	Studies included	Subjects included	Pooled risk (95% CI)	Maternal Health Corollary
Heart disease	Nicholson et al	21	124,509	1.81 (1.53 to 2.15)	Preeclampsia
Hypertension	Meng et al	9	22,367	1.42 (1.09 to 1.86)	
Diabetes	Mezuk et al	13	212,019	1.60 (1.37 to 1.88)	Gestational diabetes
Obesity	Luppino et al	9	6,436	1.58 (1.33 to 1.81)	Gestational weight gain

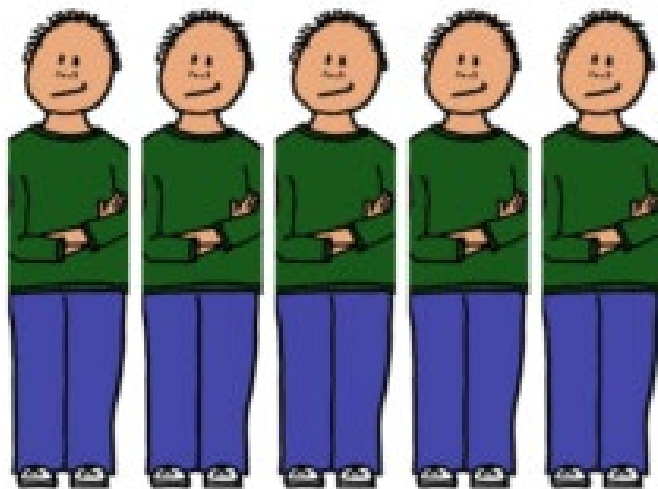
Unutzer J et al. JAMA 2002

Katon WJ et al. Arch Gen Psychiatry 2004

McGregor M et al. J Ambul Care Manage 2011

Objectives

- Describe the perinatal depression treatment cascade and contemporary outcomes
- Understand the evidence to support efficacy of perinatal collaborative care
- Review implementation strategies for perinatal collaborative care at MetroHealth



Vs



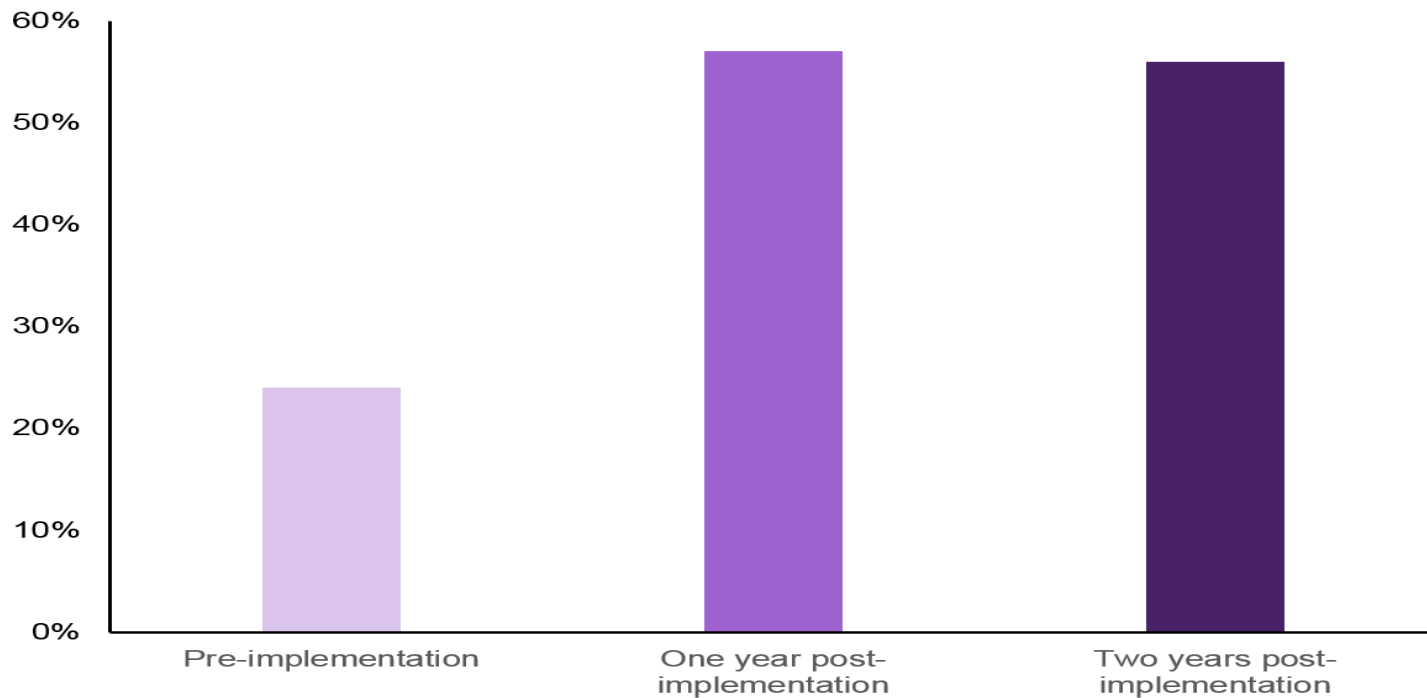
The DIAMOND initiative: implementing collaborative care for depression in 75 primary care clinics

Leif I Solberg^{1*}, A Lauren Crain¹, Nancy Jaeckels², Kris A Ohnsorg¹, Karen L Margolis¹, Arne Beck³, Robin R Whitebird¹, Rebecca C Rossom¹, Benjamin F Crabtree⁴ and Andrew H Van de Ven⁵



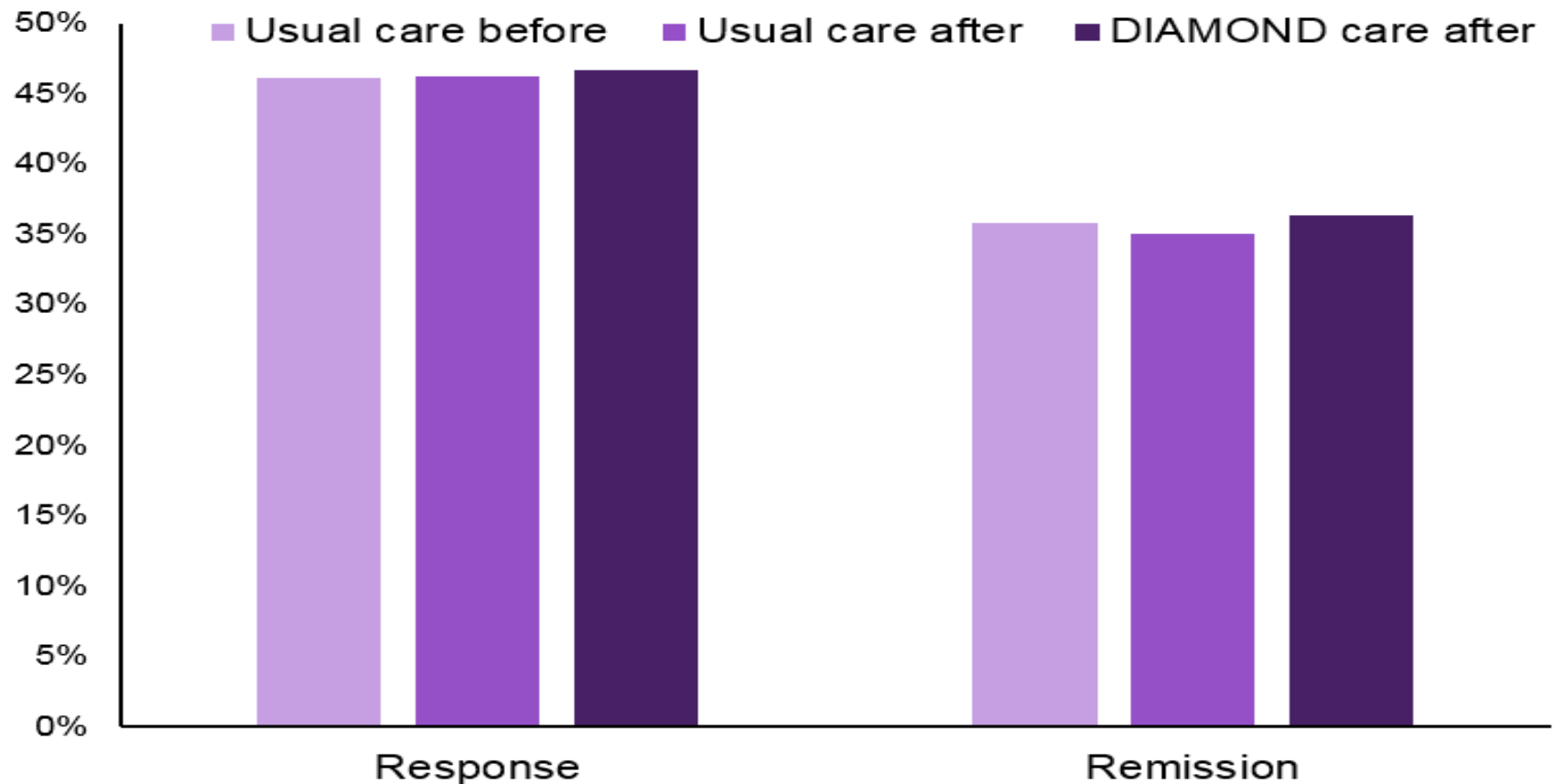
1. Consistent use of a standardized tool for assessing and monitoring depression severity
2. Systematic patient tracking (registry)
3. Treatment intensification for those not improving
4. Relapse prevention
5. A care manager to educate, monitor, and coordinate care
6. Weekly psychiatric caseload review
7. Monthly report of overall performance measures from each clinic

Adherence to Collaborative Care Principles



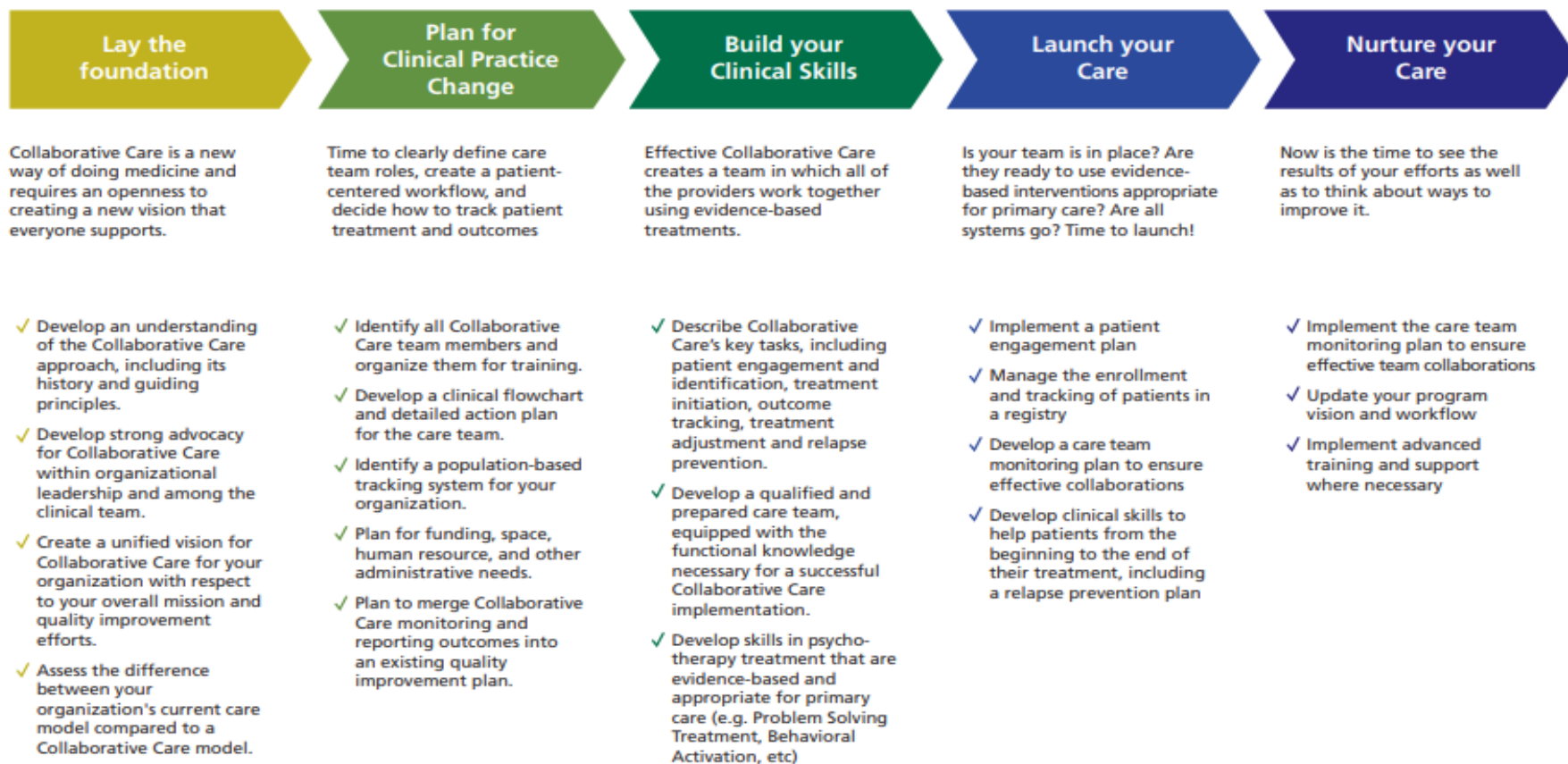
- 18 clinics demonstrated no or minimal change
- 12 clinics ultimately dropped out of the program

A Stepped-Wedge Evaluation of an Initiative to Spread the Collaborative Care Model for Depression in Primary Care

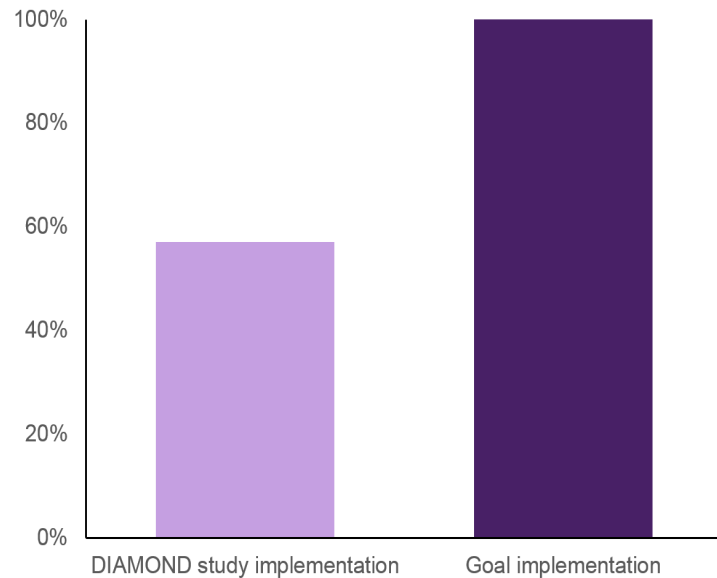


Guidelines on Implementation

COLLABORATIVE CARE: A step-by-step guide to implementing the core model



Guidelines on Implementation

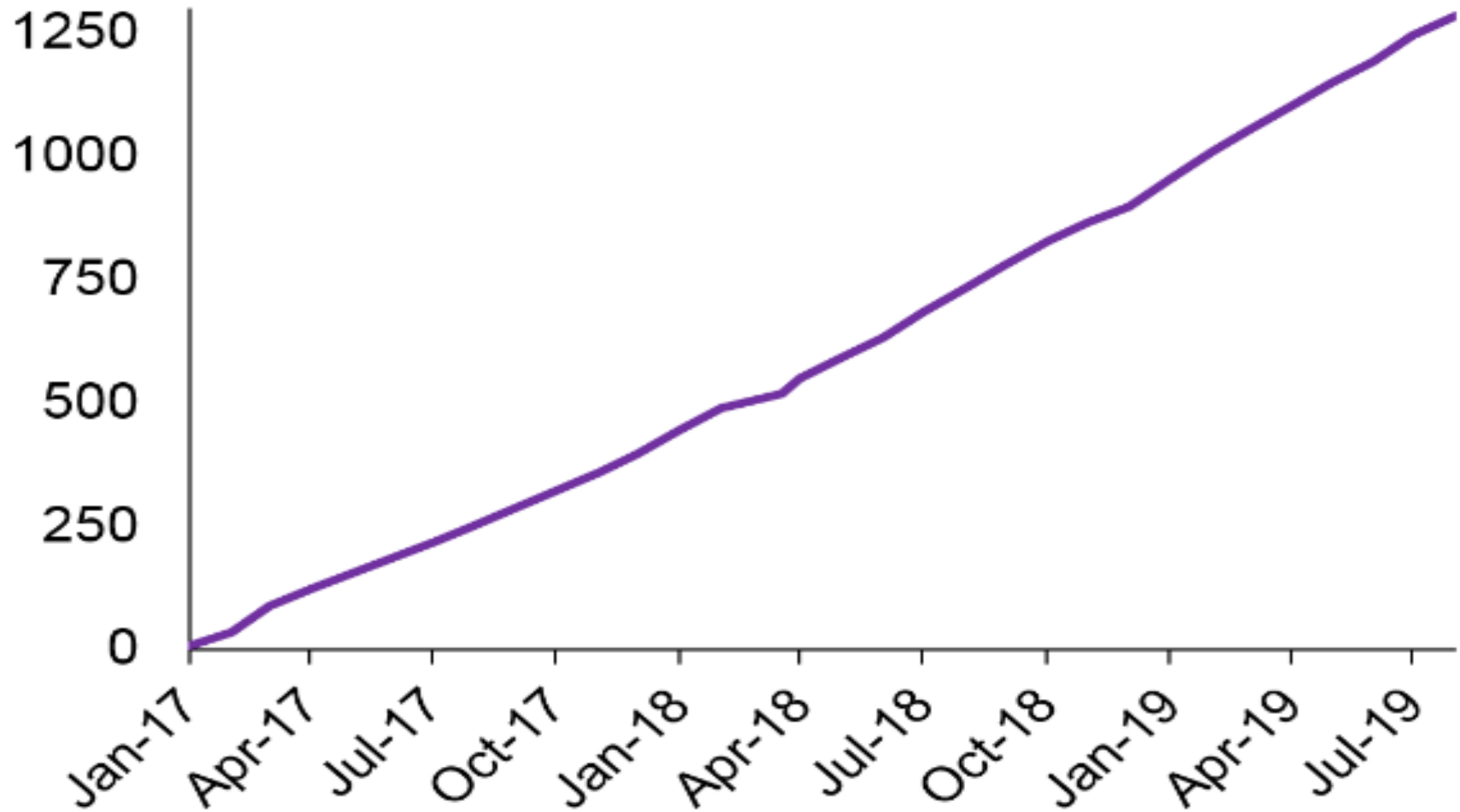


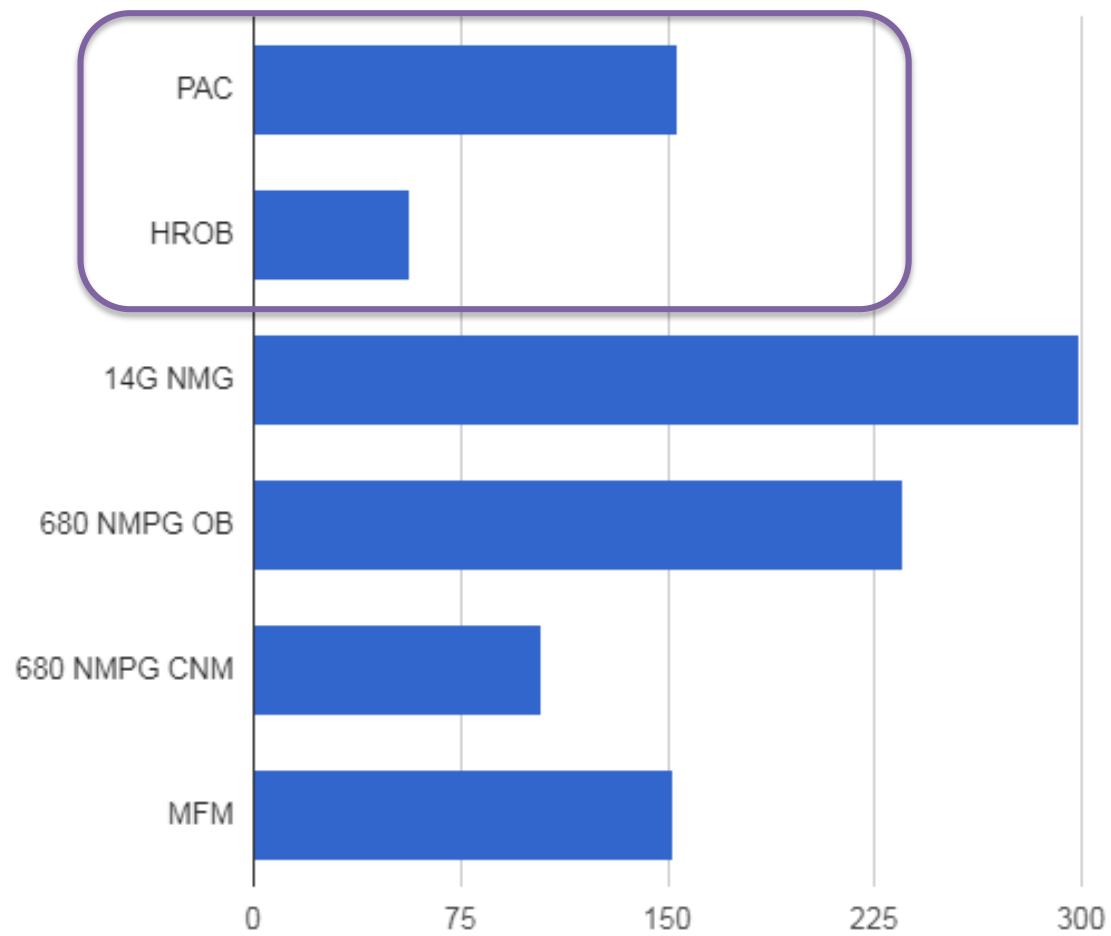
- Health disparities implications
 - Clinics with a lower proportion of commercially insured patients were more likely to drop out of the DIAMOND study
- Implementation within perinatal care



A Collaborative Care Model for Perinatal Depression Support Services (COMPASS)

COMPASS Referrals





Core Principles of Collaborative Care



- Patient centered team care



- Population-based care



- Measurement-based treatment to target



- Evidence-based care



- Accountable care



Depression Screening Algorithm for Obstetric Providers

The PHQ-9 should be administered during:

- Initial intake or first obstetric visit
- Visit in 3rd trimester
- If high-risk* patient, 2 weeks post-partum
- 6 weeks post-partum visit

PHQ-9 Score < 10

Does not suggest depression

Educate patient about the importance of emotional wellness.

Provide COMPASS brochure for future reference.

PHQ-9 Score ≥ 10

May suggest depression

(1) Assess patient clinically

Consider comorbid illnesses, such as substance use or medical causes of depression (e.g. anemia, thyroid disorders)

(2) Score of 2+ (more than half of the time) on questions #1 (anhedonia) or #2 (depressed mood) likely indicate depression.

(3) Screen for Bipolar Disorder using MDQ (Mood Disorder Questionnaire)

For clinical concerns of mental illness, call COMPASS Care Coordinator

COMPASS collaborates with you and the patient to determine a treatment plan that can include on-site psychotherapy and/or psychiatry consultation, then follows-up with you and the patient frequently until remission.

Positive score on question #9

Suggests risk of self-harm or suicide

Assess for risk of suicide or harm

Do NOT let the patient leave without developing a safety plan. Further assessment or treatment plan must be established and documented in medical record.

Call COMPASS Care Coordinator

Core Principles of Collaborative Care



- Patient centered team care



- Population-based care



- Measurement-based treatment to target



- Evidence-based care



- Accountable care



Antidepressant Medications

	Drug	Dosing Notes	Side Effects	Specific Drug Information
SSRI	Sertraline (Zoloft)	Prescribe 50 mg tabs Start: ½ tab for 2 days, if no side effects, increase to 50 mg/day Increase by 25-50 mg/day Q 2 weeks until remission unless side effects occur Range: 50-200mg/day	<u>Common:</u> nausea, diarrhea, headaches; sexual side effects common—anorgasmia, low desire—may improve over months	<u>First line in pregnancy and lactation</u> due to minimal risk for interaction with other drugs, tolerability and low risk of neonatal discontinuation signs in infants born to treated pregnant women
	Citalopram (Celexa)	Prescribe 20 mg tabs Start: ½ tab for 2 days, if no side effects, increase to 20 mg QAM Range: 10-40 mg/day (20mg/day if hepatic impairment) Range: 20-40 mg/day	<u>Rare:</u> Although SSRIs have been reported to increase bleeding risk, this has not been confirmed and is a rare event if the association exists. When using other drugs that affect bleeding risk, educate patient to monitor for bleeding as you usually would and adjust dose as needed	Citalopram and Escitalopram are not recommended for patients with congenital long QT syndrome, bradycardia, hypokalemia, or hypomagnesemia, recent acute myocardial infarction, or uncompensated heart failure. Citalopram should be used with monitoring of the EKG in patients who are taking other drugs that prolong the QT interval (erythromycin, hydroxychloroquine, quetiapine, olanzapine, methadone).
	Escitalopram (Lexapro)	Prescribe 10 mg tabs Start: ½ tab for 2 days, if no side effects increase to 10mg am Range: 10-20mg/day		More activating than other SSRIs; long half-life reduces withdrawal risk
	Fluoxetine (Prozac)	Prescribe 20 mg capsules Start one cap Q AM and skip one day Take 20 mg QAM if no side effects; increase by 20 mg every 4 weeks until remission or until side effects occur Range: 20-60 mg /day	Potent CYP 2D6 inhibitor; will increase the concentrations of other 2D6 substrates – e.g: metoprolol, metoprolamide, ondansetron, oxycodone, nortriptyline and amitriptyline. Decrease the initial dose of these drugs and assess effects or prescribe a different antidepressant.	Potent CYP 2D6 inhibitor (see note under fluoxetine)
	Paroxetine (Paxil)	Start: Prescribe 20 mg tabs Start: ½ tab for 2 days, if no side effects, 20mg/day; may be sedating and can be taken at HS Range: 20-60mg/day		Second line drug. Anticholinergic; weight gain; significant withdrawal syndrome and neonatal discontinuation signs for infants of treated pregnant women

Core Principles of Collaborative Care



• Patient centered team care



• Population-based care



• Measurement-based treatment to target



• Evidence-based care



• Accountable care

SNRI	Venlafaxine (Effexor)	Start: IR-37.5mg BID x 4 days then increase to 75 mg BID; ER-75mg QAM x 4 days then increase to 150 mg QAM Range 150-375mg/day	Same as SSRIs May increase BP and heart rate	Second line drug. More activation and GI side effects than SSRIs; significant withdrawal syndrome even with missed doses and neonatal discontinuation signs for infants of treated pregnant women
	Duloxetine (Cymbalta)	Start: 30mg qday x 4 days then increase to 60mg qday Range: 60-120mg/day		Second line drug. Used more commonly in depression with chronic pain
Other	Mirtazapine (Remeron)	Start: 15mg qhs x 3-5 days then increase to 30mg qhs Range: 30-60mg/day	Sedating; increases appetite Long term weight gain	Second line drug. Sedating and appetite promoting; rarely associated with neutropenia. An alternative drug for Hyperemesis gravidarum
	Bupropion (Wellbutrin)	Start: IR-100mg bid x 5 days then increase to 100mg tid; SR-150mg qam x 3-5 days then increase to 150mg bid; XL-150mg qam x 3-5 days then increase to 300mg qam Range: 300-450mg/day	Stimulating; may increase insomnia, anxiety initially May increase BP	Second line drug. Contraindicated in seizure disorder, eating disorders, alcohol use disorders, and history of traumatic brain injury because it decreases seizure threshold; stimulating; less effective for anxiety disorders Potent CYP 2D6 inhibitor; will increase in concentration for a few drugs commonly used by ob/gyns; see note under fluoxetine
Tricyclic	Nortriptyline (Pamelor)	Start 25 mg at HS for 4 days, then increase to 50 mg for 4 days, then to 75 mg Check plasma level after 7 days at 12 hours post-dose and adjust dose.		Therapeutic plasma level is 50-150; preferably 80-120 ng/ml. Dose to plasma level is linear; for example, if 100 mg dose yields level of 60 ng/ml, 150 mg will yield 1.5 (60) or 90 ng/ml. Cardiac toxicity with overdose.

Antidepressant Medication Warnings/Precautions: 1) Potential increased suicidality at the start of treatment; if anxiety increases or patient becomes agitated or energized, discontinue the antidepressant and have patient contact prescriber; 2) Discontinuation symptoms (similar to flu) may occur with abrupt discontinuation.

About Serotonin Syndrome—overstimulation of serotonin receptors: Serotonin syndrome symptoms usually occur within several hours of taking a new drug or increasing the dose. Signs and symptoms include: Agitation or restlessness, confusion, rapid heart rate and high blood pressure, dilated pupils, muscle incoordination, twitching or rigidity, heavy sweating, diarrhea, headache, shivering; if severe: high fever, seizures, cardiac conduction abnormalities; loss of consciousness. Mild to moderate cases can be treated with discontinuation of serotonergic agents plus cyproheptadine, 4 – 8 mg orally, which usually takes effect within a half hour may need to be repeated if symptoms recur.



Core Principles of Collaborative Care



- Patient centered team care



- Population-based care



- Measurement-based treatment to target



- Evidence-based care



- Accountable care

Record ID	treatment1				treatment2			treatment3			treatment4			treatment5			treatment6			treatment7			treatment8		
	PHQ9 enrollment	PHQ9	Dose Change	Side Effect Rating Scale	PHQ9	Dose Change	Side Effect Rating Scale	PHQ9	Dose Change	Side Effect Rating Scale	PHQ9	Dose Change	Side Effect Rating Scale	PHQ9	Dose Change	Side Effect Rating Scale	PHQ9	Dose Change	Side Effect Rating Scale	PHQ9	Dose Change	Side Effect Rating Scale	PHQ9	Dose Change	Side Effect Rating Scale
C747																									
C748																									
C749																									
C753																									
C754																									
C755																									
C756																									
C757																									
C759																									
C760																									
C761																									
C763																									
C764																									
C766																									
C768																									
C769																									
C770																									
C771																									
C772																									
C773																									
C774																									
C775																									
C776																									
C777																									
C778																									
C779																									
C780																									
C781																									
C782																									
C783																									
C784																									
C785																									
C786																									
C787																									
C788																									
C789																									
C790																									
C791																									
C793																									
C794																									
C796																									
C797																									
C798																									
C799																									
C800																									
C801																									
C802																									
C803																									
C804																									



Antidepressant Treatment Algorithm

Use **half** the recommended dose for **2 days**, then increase in specified increments **every 2 weeks** until patient achieves remission or has side effects*

sertraline (Zoloft) 50-200 mg •Increase in 50 mg increments	fluoxetine (Prozac) 20-60 mg •Increase in 10 mg increments	citalopram (Celexa) 10-40 mg •Increase in 10 mg increments	escitalopram (Lexapro) 5-20 mg •Increase in 5 mg increments
---	--	--	---



Reevaluate depression treatment every **2 weeks**
via PHQ-9 and clinical assessment

If PHQ-9 remains ≥ 5 ...

- If no/minimal side effects → increase dose and/or add psychotherapy
- If side effects* → consider switching to different medication
- Consider contacting COMPASS Care Coordinator to facilitate psychiatry consultation

If PHQ-9 is < 5 and no/minimal side effects...

- Reevaluate every month and at postpartum visit

Educate Patient: Within first few doses, if she has marked increase in anxiety, becomes agitated, or feels energized, stop the medication and contact COMPASS

*Common side effects of SSRI include: nausea, dry mouth, insomnia, diarrhea, headache, dizziness, agitation, sexual problems, and drowsiness

Core Principles of Collaborative Care

- ✓ • Patient centered team care
- ✓ • Population-based care
- ✓ • Measurement-based treatment to target
- Evidence-based care
- Accountable care



Core Principles of Collaborative Care



• Patient centered team care



• Population-based care



• Measurement-based treatment to target



• Evidence-based care



• Accountable care

Objectives

- Describe the perinatal depression treatment cascade and contemporary outcomes
- Understand the evidence to support efficacy of perinatal collaborative care
- Review implementation strategies for perinatal collaborative care at MetroHealth



Team

COMPASS program director



Emily Miller

clinical liaison



Jackie Gollan

COMPASS care coordinators (CCC)



Rebekah Jensen
Lauren Ratliff

psychiatrists



Aparna Chatterjee Louisa Olushoga

therapist



Rachel Ostrov

mentorship team

Kathie Wisner
Bill Grobman

data management team

Jody Ciolino
Daniel Erikson
Katelyn Zumpf

Thank you