

Comparative Effectiveness of Collaborative Chronic Care Models for Mental Health Conditions: Systematic Review, Meta-Analysis & Implementation Strategies

Mark S. Bauer, MD

**VA Center for Organization, Leadership, & Management
Research (COLMR)**

Amy M. Kilbourne, PhD, MPH

**VA Ann Arbor Center for Clinical Management Research
& VA Quality Enhancement Research Initiative**



Disclosures

Royalties (~\$300/year):

Springer Publishing (MSB)

Structured Group Psychotherapy for Bipolar Disorder:

The Life Goals Program

[therapist manual]

New Harbinger (MSB, AMK)

Overcoming Bipolar Disorders

[patient self-guided workbook]

Cyberseminar Outline

- 1. Meta-Analysis of Collaborative Chronic Care Models (CCMs) for Mental Health Conditions***
- 2. The Bipolar CCM: Implementation Strategies**
- 3. Audience Discussion**

***Woltmann E, Grogan-Kaylor A, Perron B, Georges H, Kilbourne AM, Bauer MS. Comparative effectiveness of collaborative chronic care models for mental health conditions across primary, specialty, and behavioral health settings. Systematic review and meta-analysis. *Amer J Psychiatry* 2012; 169:790-804**

Defining Collaborative Chronic Care Models

- **Goal: Evidence-based, anticipatory, continuous, collaborative care**
- **CCM Elements:**
 - **Practice redesign**
 - **Patient self-management support**
 - **Expert systems (on-site, guidelines)**
 - **Information systems**
 - **Community linkages**
 - **Leadership / organizational commitment**

Wagner & Von Korff 1996&1997; Coleman 2009

CCM Elements

Evidence-Based, Planned Care via:				
Practice Redesign	Patient Education	Expert Systems	Information Mgt.	Community Linkages
<ul style="list-style-type: none"> •Scheduling •Work Roles •Follow-Up 	<ul style="list-style-type: none"> •Self-Mgt •Beh'l Change •Collaboration •Shared Decision-Making 	<ul style="list-style-type: none"> •Provider education •Decision Support •Specialty Consultation 	<ul style="list-style-type: none"> •Registry •Reminders •Outcome tracking •Feedback •Care Plans 	<ul style="list-style-type: none"> •Additional Resources •Peer-Based Support

Key Concepts: *Anticipatory, Population-Based, Partnered*

(after Wagner 1996, Von Korff 1997; Bodenheimer 2002)

CCMs: The RCT Evidence

- **Diabetes**
- **Asthma**
- **Arthritis**
- **Congestive heart failure**
- **Frail elderly**
- **Depression treated in primary care**
- **Growing evidence base in broader MH groups, e.g., bipolar disorder, anxiety disorders**

Systematic Review & Meta-analysis

Goals & Challenges

- ***Central Question: How broad & consistent are CCM effects on mental health outcomes?***
- **Challenges:**
 - Defining CCMs
 - ***Multiple*** populations, ***multiple*** outcome domains, ***multiple*** articles from some trials, ***multiple*** analyses in single article
 - Long-term trials with chronic outcomes → complex, adjusted/modeled analyses

CCM Definition

- **≥ 3 of the 6 Wagner-Von Korff criteria...
...whether or not “W-VK lineage” is cited**
- **Mobile treatment team interventions excluded**
- **Inter-rater reliability:**
 - **CCM yes/no: Kappa = 1.00**
 - **CCM component count: ICC = 0.93**

Defining Collaborative Chronic Care Models

- **Goal: Evidence-based, anticipatory, continuous, collaborative care**
- **CCM Elements:**

- *Practice redesign*
- *Patient self-management support*
- *Expert systems (on-site, guidelines)*
- *Information systems*
- *Community linkages*
- *Leadership / organizational commitment*

Wagner & Von Korff 1996&1997; Coleman 2009)

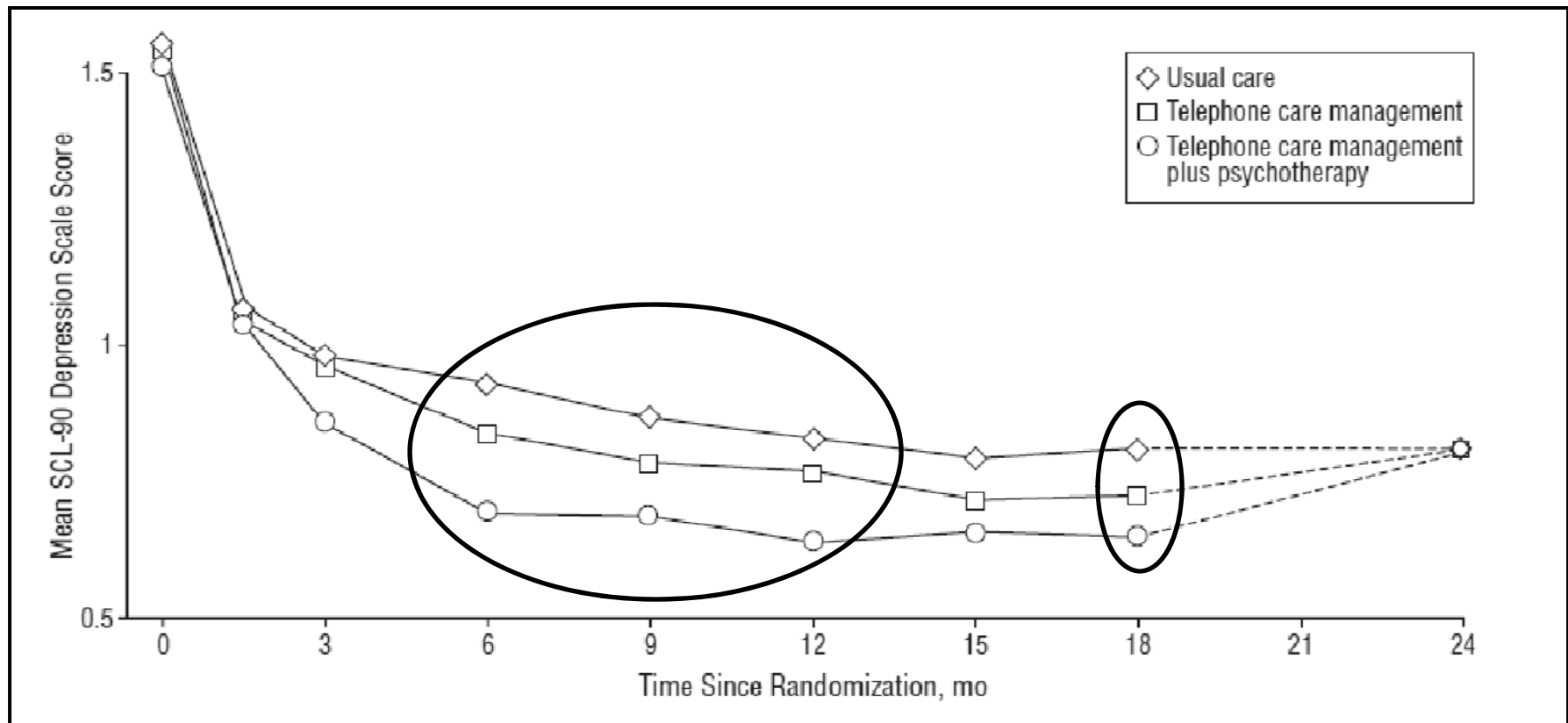
Hierarchical review schema: Outcome Domains

- **MH symptoms (depression, mania, anxiety, suicidality, etc.)**
- **Mental Quality of Life**
- **For included RCTs, also extract:**
 - **Overall Quality of Life**
 - **Social role function**
 - **Physical Quality of Life**
 - **Costs**

Hierarchical Review Schema: Specifying Outcome Analyses to Analyze

- **One analysis per outcome domain**
- **Whole sample > subsample**
- **Only most global outcome (e.g.: depression > sleep)**
- **Longest follow-up interval**
- **Continuous > categorical variable**
- **Unadjusted > adjusted analyses**
- **Whether or not primary outcome variable**

Consolidating longitudinal data into a single meta-analytic value



Simon et al, Arch Gen Psych, 2009

Systematic Review

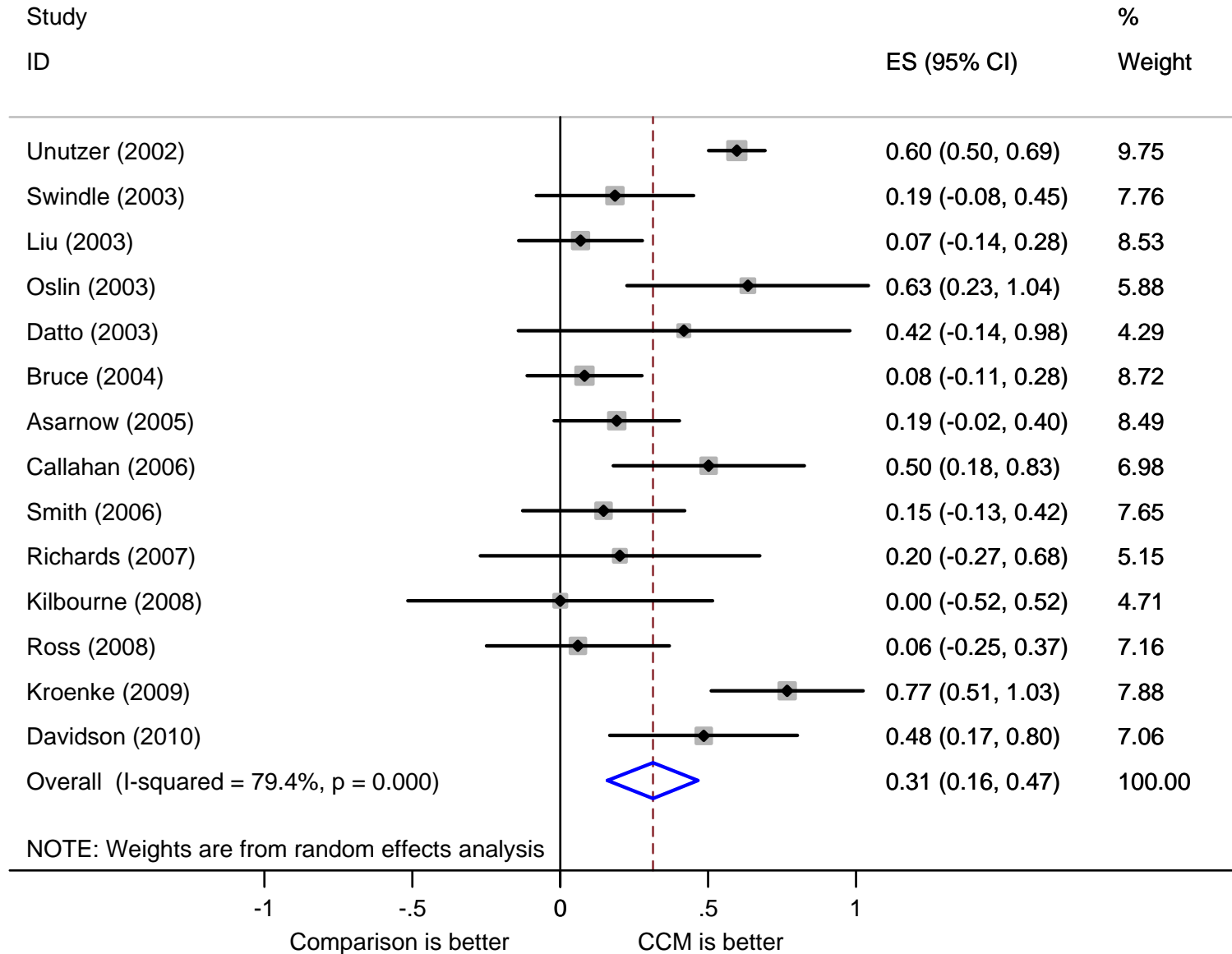
Summary of PRISMA Diagram

Articles Reviewed: 2,114

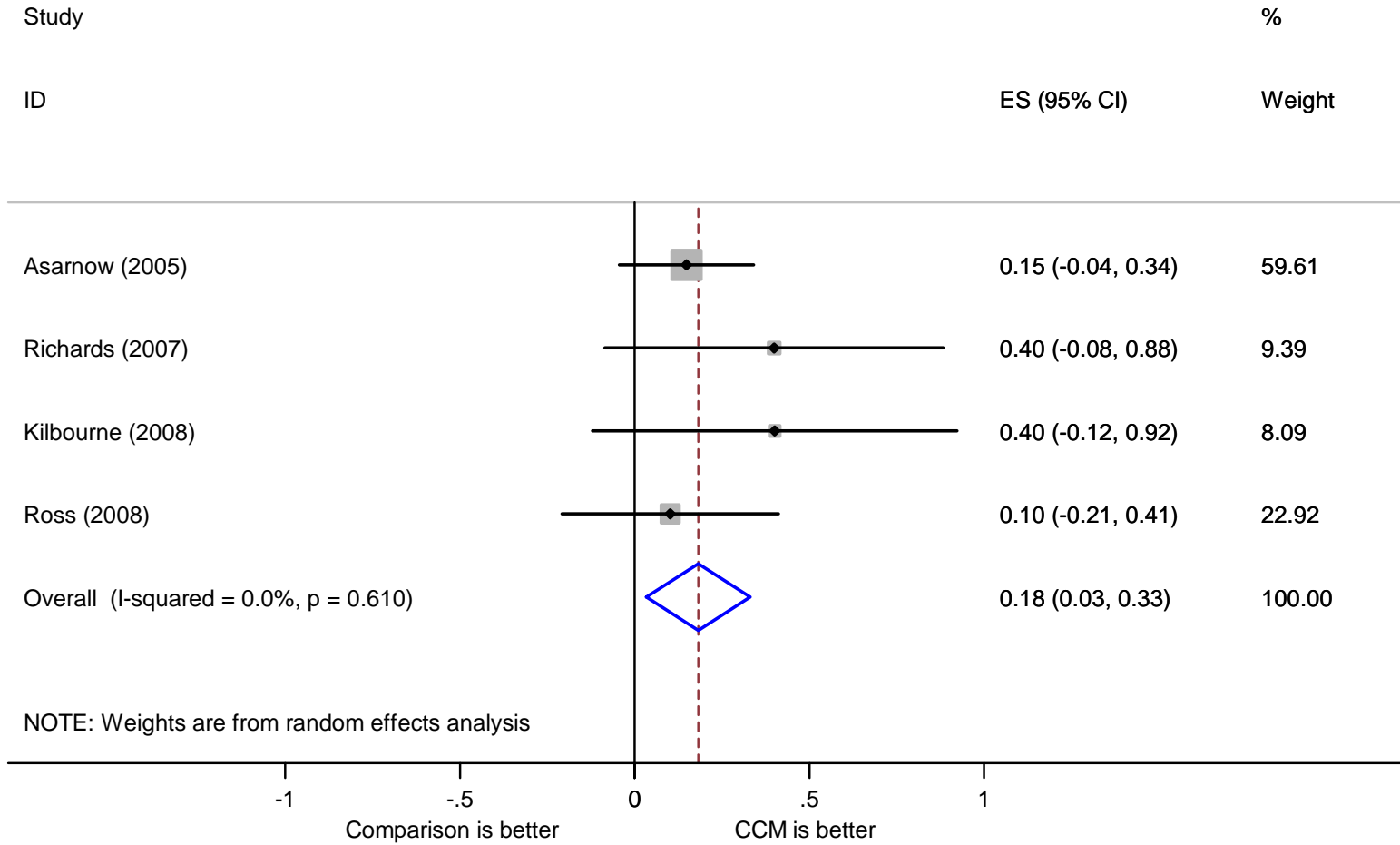
Full-Text Reviews: 272

Disorder	RCTs	Articles	Unique Analyses
Systematic Review Totals	57	78	161
Meta-Analysis Totals	30	28	46
Depressive Disorders	40	60	108
Bipolar Disorders	4	4	16
Anxiety Disorders	3	4	13
Other/Multiple Conditions	10	10	24

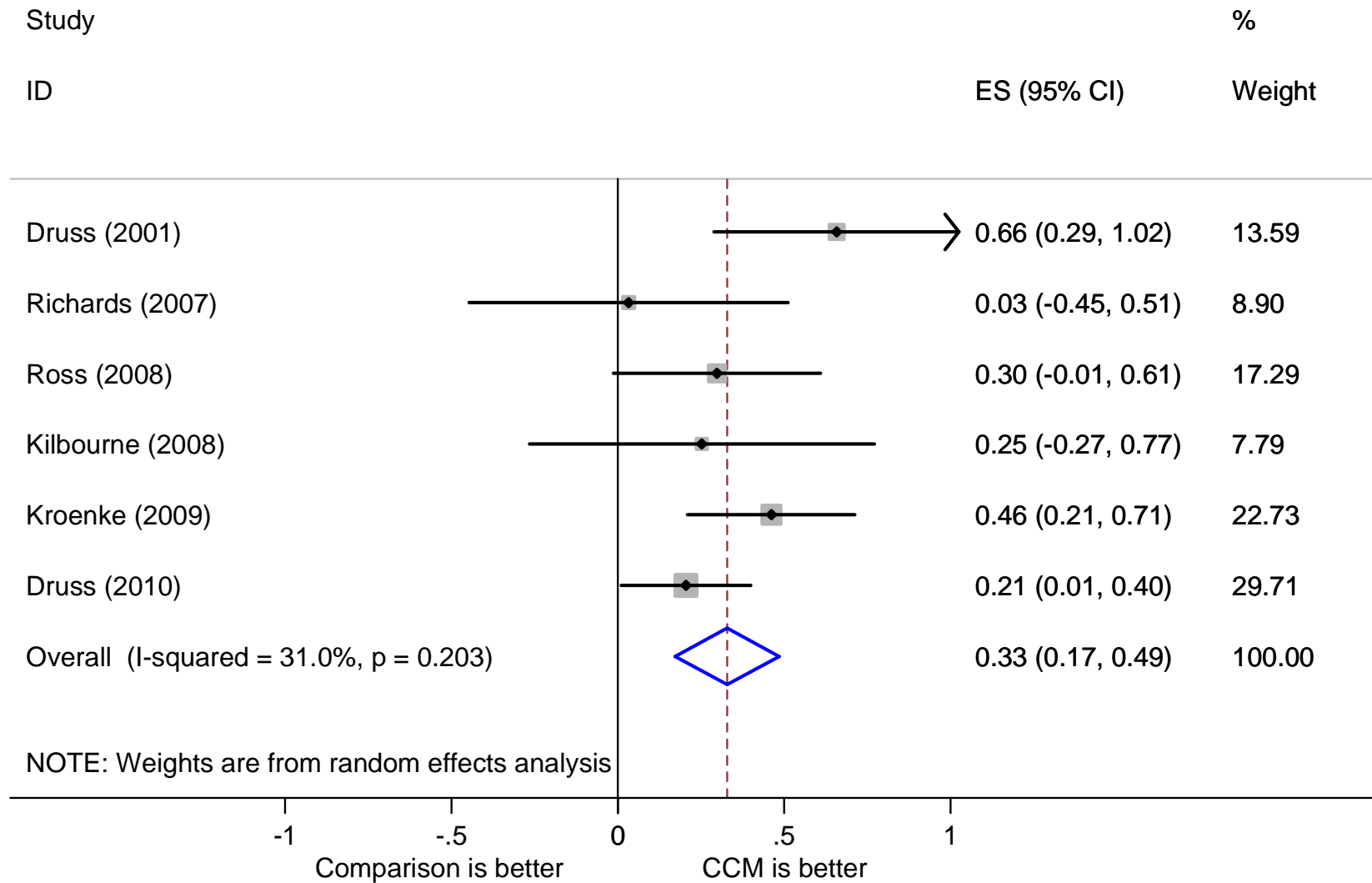
Meta-Analysis of Reductions in Depression



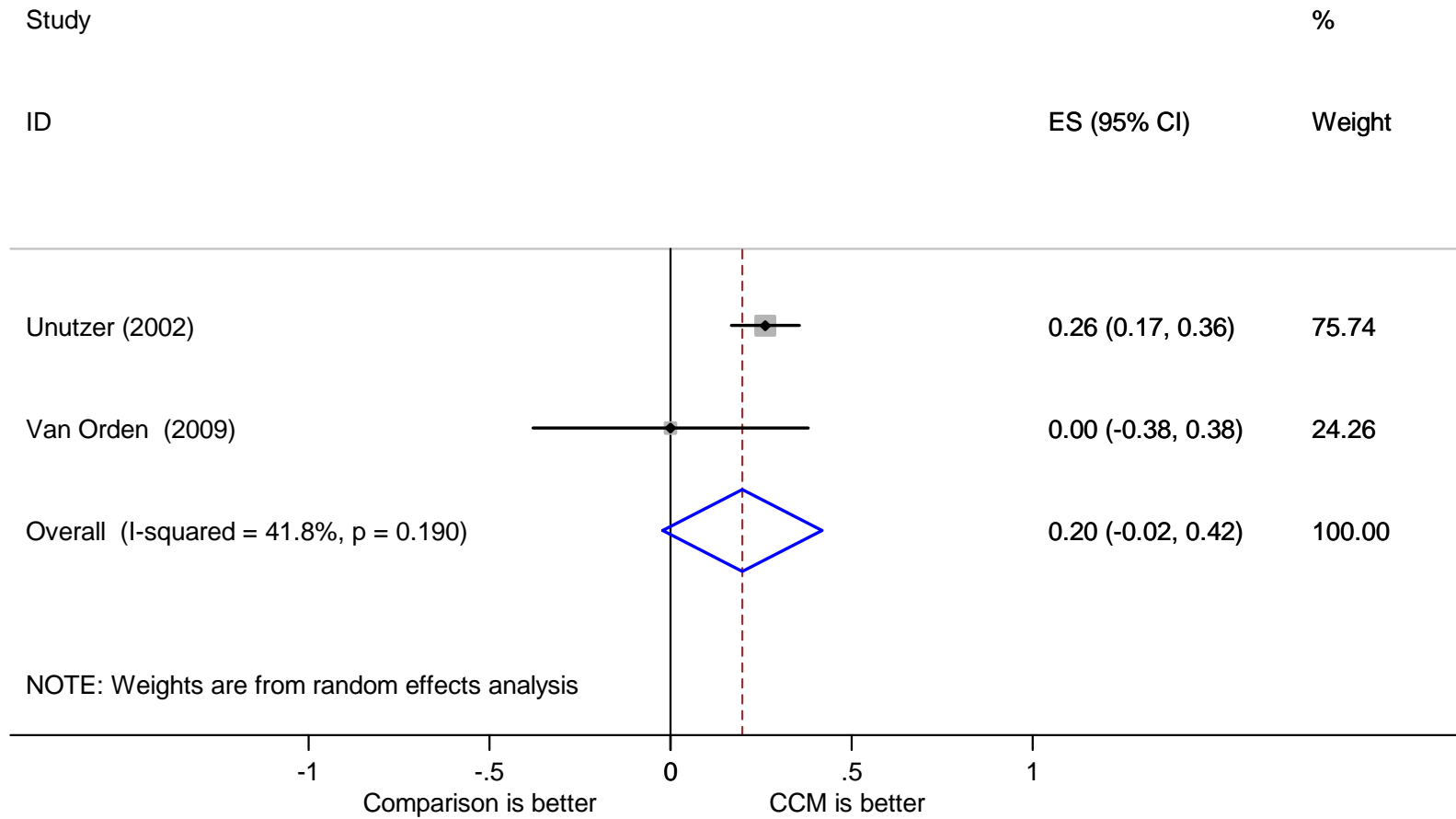
Meta-Analysis of Mental QOL



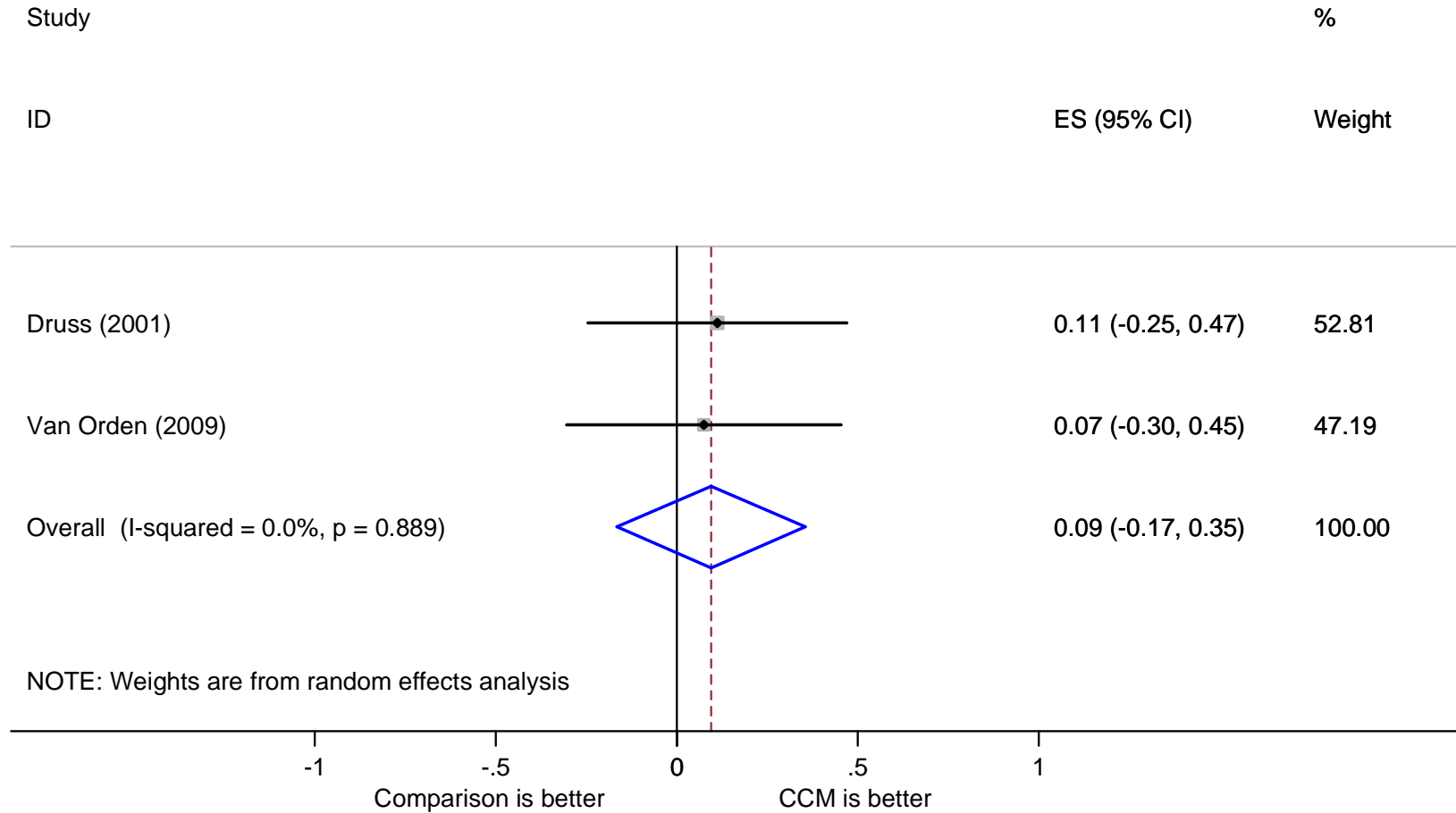
Meta-Analysis of Physical QOL



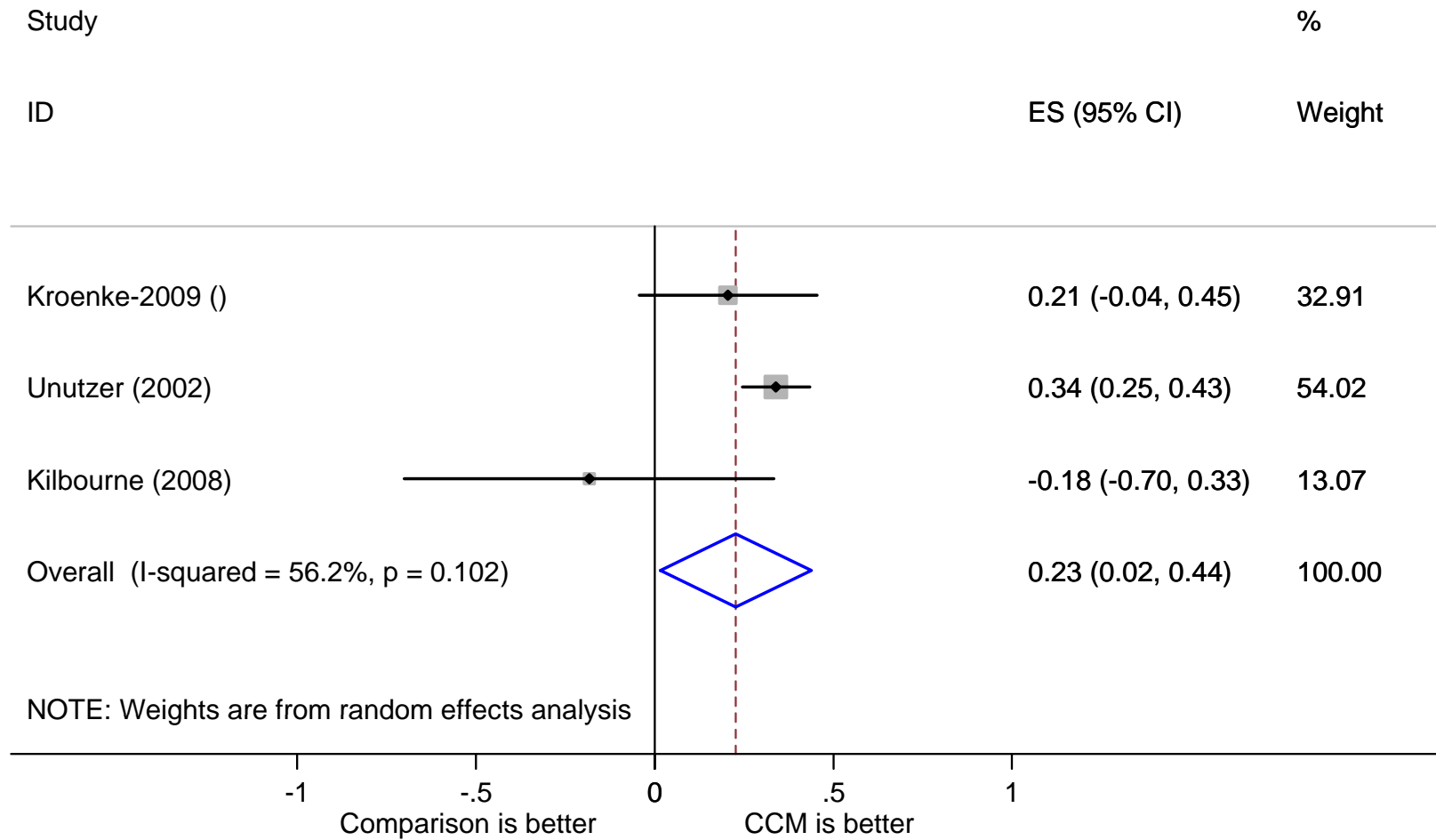
Meta-Analysis of Overall QOL



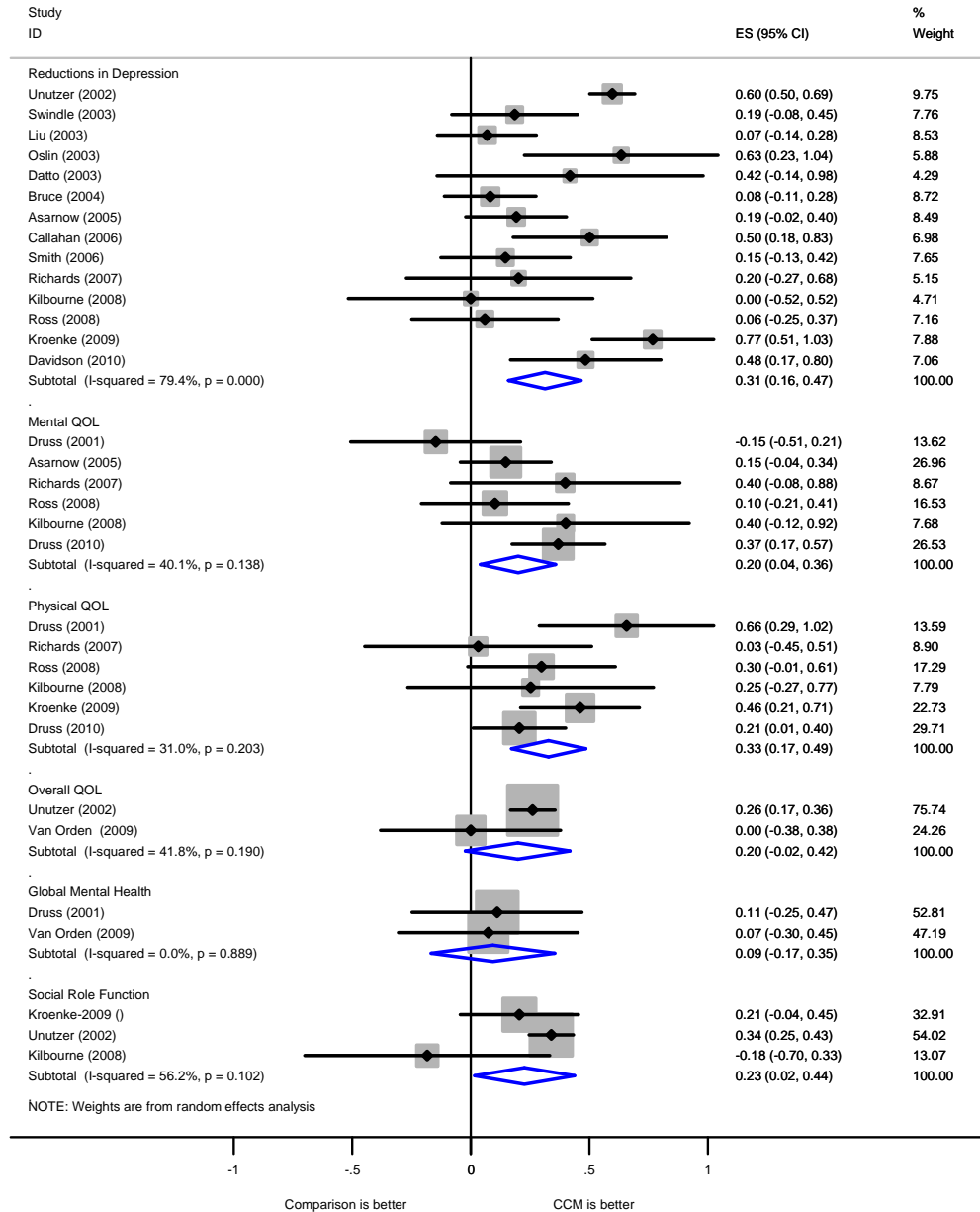
Meta-Analysis of Global Mental Health



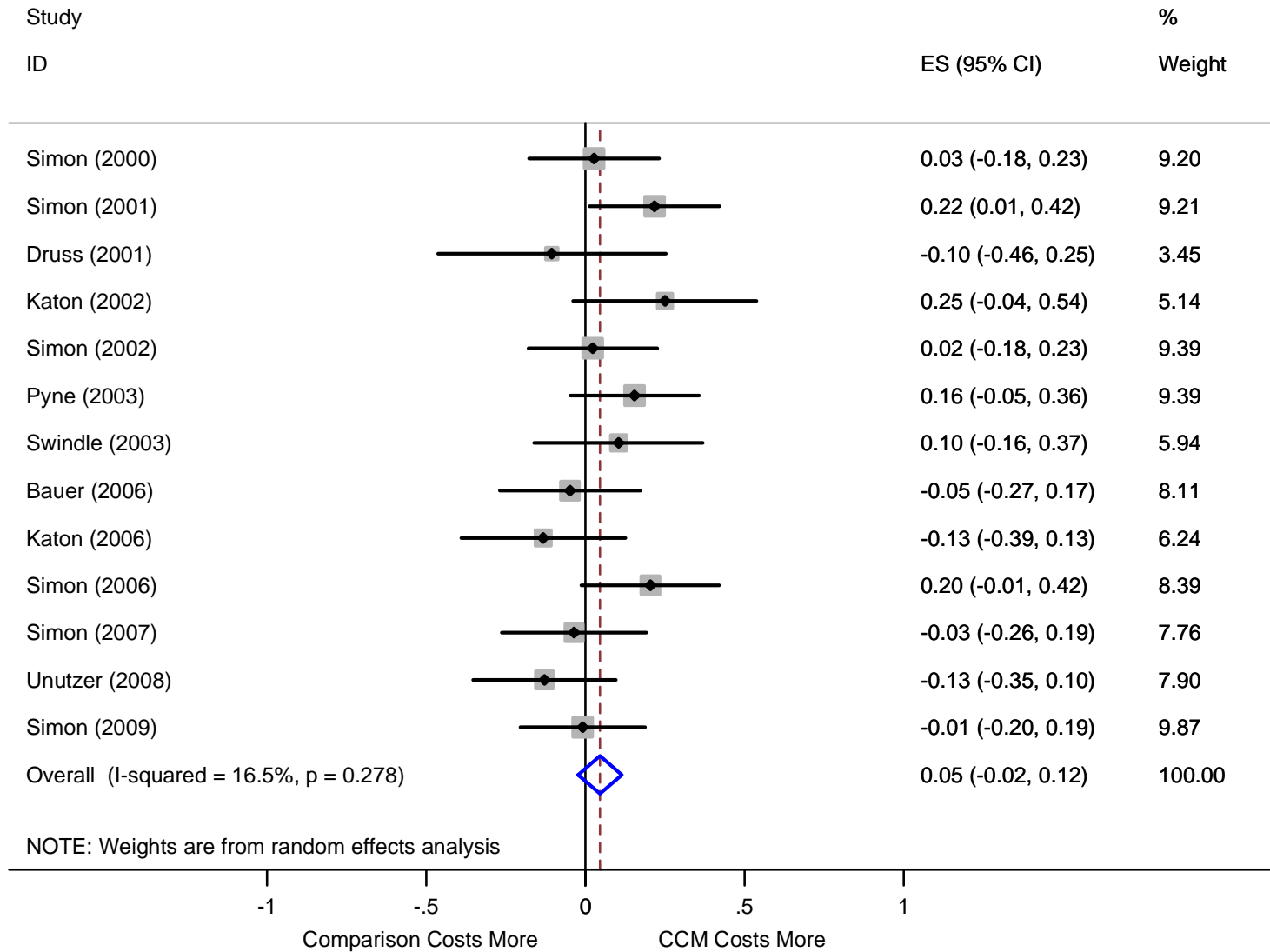
Meta-Analysis of Social Role Function



Meta-Analysis of Clinical Outcomes



Meta-Analysis of Economic Outcomes



Major Conclusions

- **Meta-analysis: significant clinical effects for all clinical domains except n=2's**
 - **Across diagnostic groups**
 - **Across care settings**
 - **Economics: Improved outcome comes at little to no net cost**
- **Systematic review: Similar on broader sample of studies**

Limitations

- **Majority of studies on depression**
 - Most but not all of these from primary care
 - *However, CCMs are no longer just “depression in primary care” interventions*
- **Conservative bias toward negative results**
 - Primary, secondary, tertiary analyses included → inclusion of underpowered analyses
 - Meta-analysis excludes adjusted outcomes

State of the Art →

Next Steps

- ***Enhancing clinic-based CCMs***
- ***Moving beyond clinic walls***
- ***Implementation strategies***

Enhancing Clinic-Based CCMs

- **Enhance CCM for greater effects (e.g., depression in bipolar disorder)**
 - **Identify & augment “active ingredients”**
- **Cross-diagnosis considerations**
 - **Physical as well as mental health focus**

Moving Beyond Clinic Walls

- ***TeleHealth delivery***
 - **VA National Bipolar Telehealth Program (begun 2011)**
- ***“Supra”-clinic level***
 - **State-level initiatives (e.g., DIAMOND in MN)**
 - **Commercial insurers**

Implementation Strategies

- **Implementation science agenda**
 - **Identifying optimal implementation strategies**
 - **Interaction with context (e.g., Medical Homes)**
- **Example: The Bipolar Disorders CCM**

The Bipolar CCM: National Practice Guideline Endorsements

- **Canadian Network for Mood & Anxiety Treatments, 2006:**
 - **Yatham et al, Bipolar Disord 2006; 8(6):721-739.**
- **VA / DoD Clinical Practice Guidelines, 2010:**
 - **http://www.healthquality.va.gov/Management_of_Bi.asp**
- **SAMHSA National Registry of Evidence-Based Programs and Practices (NREPP), in process:**
 - **<http://nrepp.samhsa.gov/Index.aspx>**

Implementing CCMs

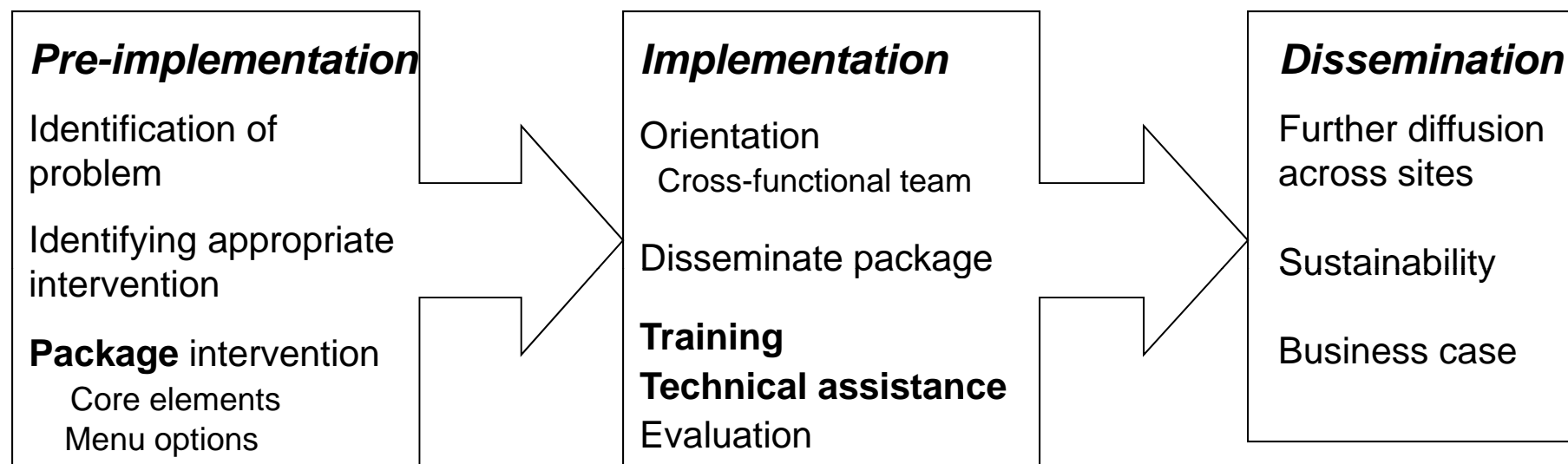
Recovery-Oriented Collaborative Care (ROCC; R01 79994)

- **Close the research-to-practice gap**
- **CCMs not fully disseminated in real world**
 - **Organizational barriers**
 - **Lack of specificity, training for providers on implementing specific components**
 - **Aligning organizational/financial incentives**
- **Need specified implementation strategy to enhance uptake and promote return-on-investment**

ROCC Goals

- **Apply enhanced version of CDC's Replicating Effective Programs (REP) framework to implement bipolar CCM**
- **Implement CCM comparing Enhanced REP (adding customized facilitation) to standard REP in community-based practices**
- **Hybrid Type II design**
 - **Patient outcomes**
 - **Provider acceptance**
 - **Return-on-investment (cost-effectiveness of E-REP, CCM)**

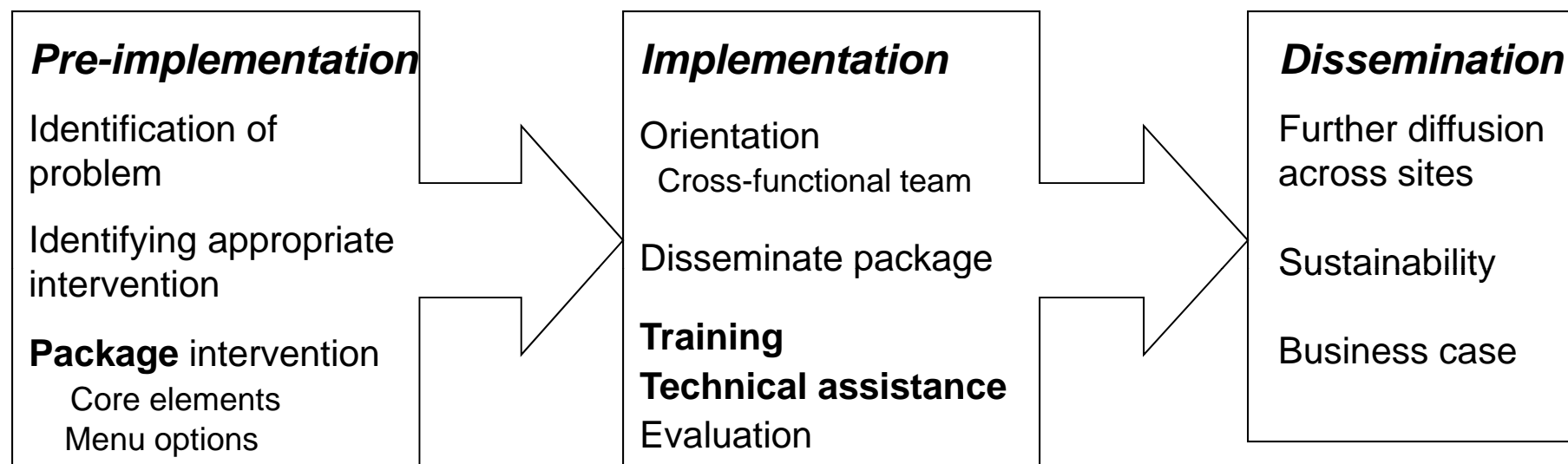
Enhanced REP Conceptual Framework



Replicating Effective Programs (REP) was developed by Centers for Disease Control to rapidly translate HIV prevention programs to community-based settings, and based on Social Learning Theory and Rogers' Diffusion Model. Enhanced REP includes additional facilitation components based on the PARIHS framework: developing relationships and promoting provider self-efficacy

Kilbourne et al. Imp Science 2007; Kilbourne et al. Psychiatric Services 2012

Enhanced REP Conceptual Framework



Pre-implementation

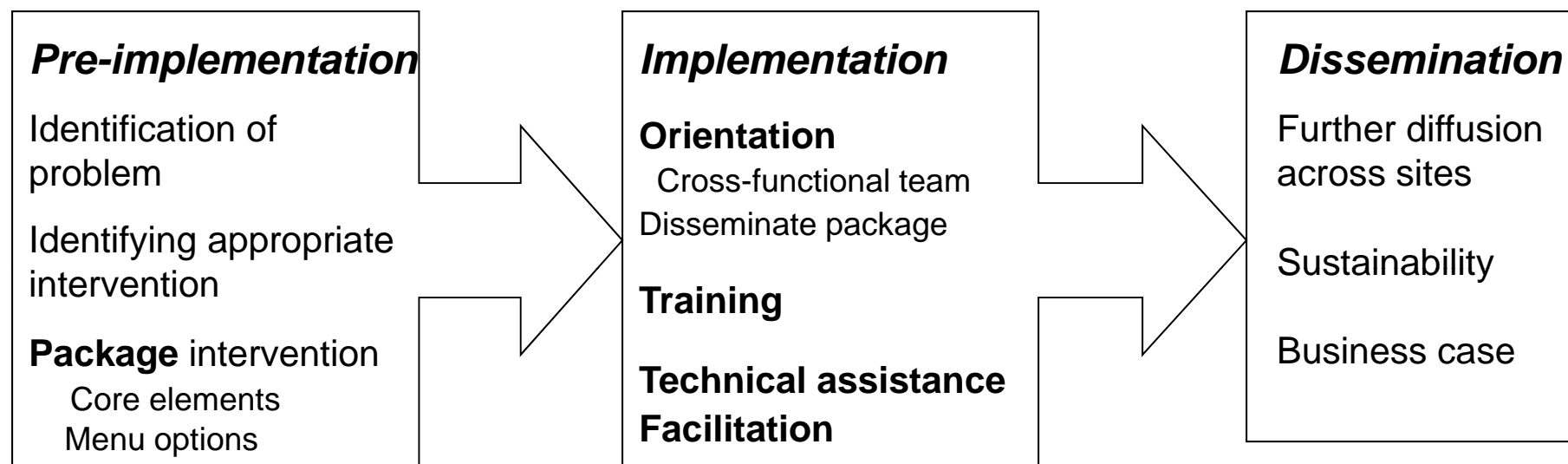
What do providers, consumers need? (Pain points)

What are the appropriate EBPs?

Packaging: translation of manuals into user-friendly core elements

Flexibility (menu options)

Enhanced REP Conceptual Framework



Implementation

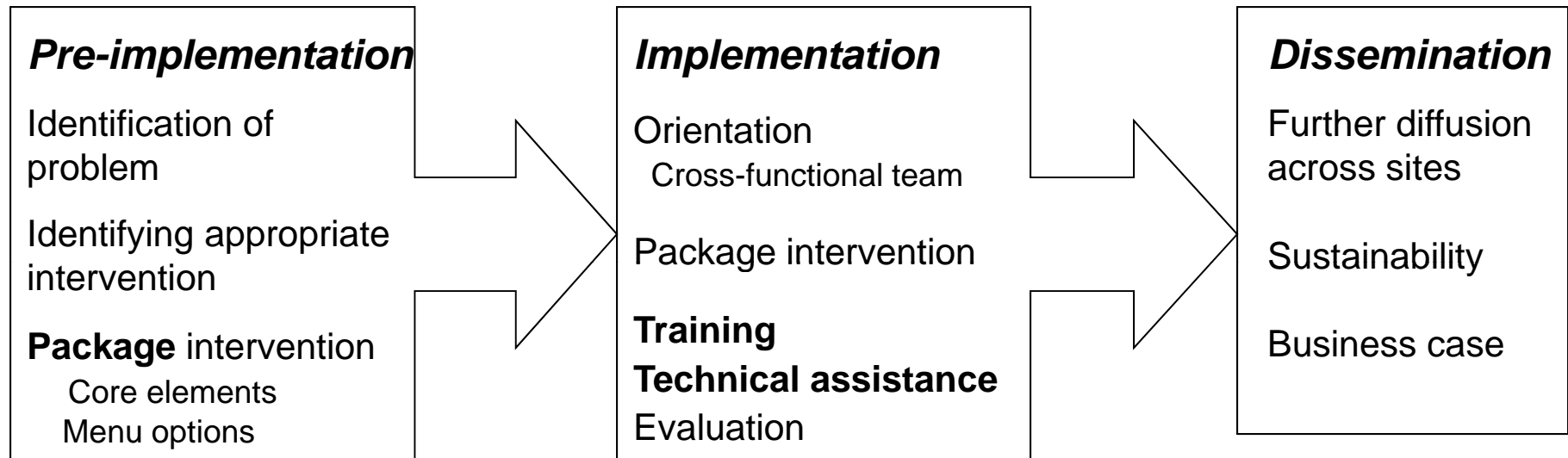
Cross-functional teams: buy-in, input

Training and orientation

Technical assistance (6 months): regular meetings/calls

Facilitation: 6-12 months

Enhanced REP Conceptual Framework: Technology Transfer for Implementation



Dissemination: on beyond implementation

Spread and sustainability

Reimbursement models

Enhanced and Standard REP

	Enhanced REP	Standard REP
Package	Customized CCM package based on Community Working Group input	Standard CCM package
Training	Customized training program via provider input for staff Site in-services & rollout	Standard training program & rollout
TA & Facilitation	Active calls to site by implementation expert with providers, leaders- facilitate organizational/financial incentives	Technical Assistance as needed

Enhanced REP Facilitation

- **Initiation and needs assessment**
- **Relationship-building across providers**
- **Benchmarking and feedback**
- **Adaptation and alignment with site needs**
- **Ongoing marketing and sustainability**

Stetler et al 2006; Kirchner Facilitation Manual

REP: Balancing Fidelity, Flexibility

- **Distilling intervention into Core Elements**
 - **Theory, internal logic of program that achieves desired effect**
 - **Example: self-management = active discussions of cost-benefits of behavior change**
- **Customize “menu options” – stakeholder input**
 - **Mode by which core element is delivered**
 - **Example: self-management group, 1:1, phone**
- **Designed to enhance fidelity over time, buy-in**

Enhanced REP Facilitation

Component	Mean Hours Per Enhanced REP Site
Initiate contacts/needs assessment	22
Relationship building	112
Benchmarking and review	15
Adaptations/alignment	11
Marketing and publicity	13
Total	172 hrs (~\$5,500/year)

Enhanced REP: Future Directions

- **Business case for Enhanced REP/CCM**
 - **ROCC Outcomes/CEA underway**
- **VA manualization of Enhanced REP/Facilitation**
 - **VA SMI ReEngage Initiative**
 - **Homeless HSR Initiative testing adaptive implementation strategy using E-REP**
 - **MH QUERI Facilitation training (PC-MHI, MHO)**

Implementation Roadmap

Early Lessons “*Boots-on-the-Ground*”

- **Implementation skills akin to MI, self-efficacy**
- **Build your research with the end-users in mind**
- **Look for positive deviance (practice-to-research)**
- **Can’t spend your way to adoption**
- **Measure and publicize success**
- **Relationships are key: leverage win-wins**