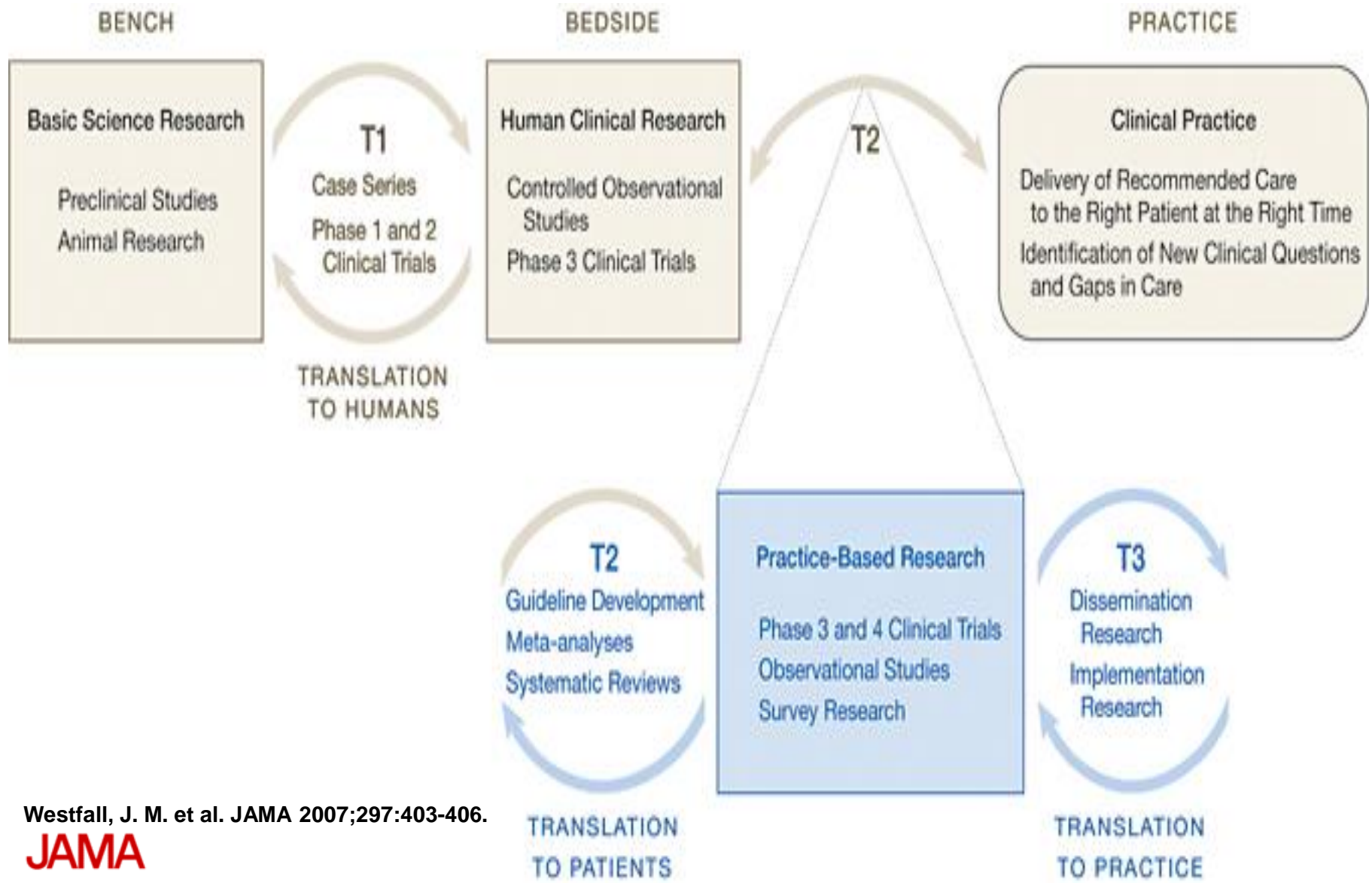


*Integrative Medicine
PBR; Allina Health and
BraveNet/PRIMIERS*

Jeffery Dusek, PhD
Director of Research

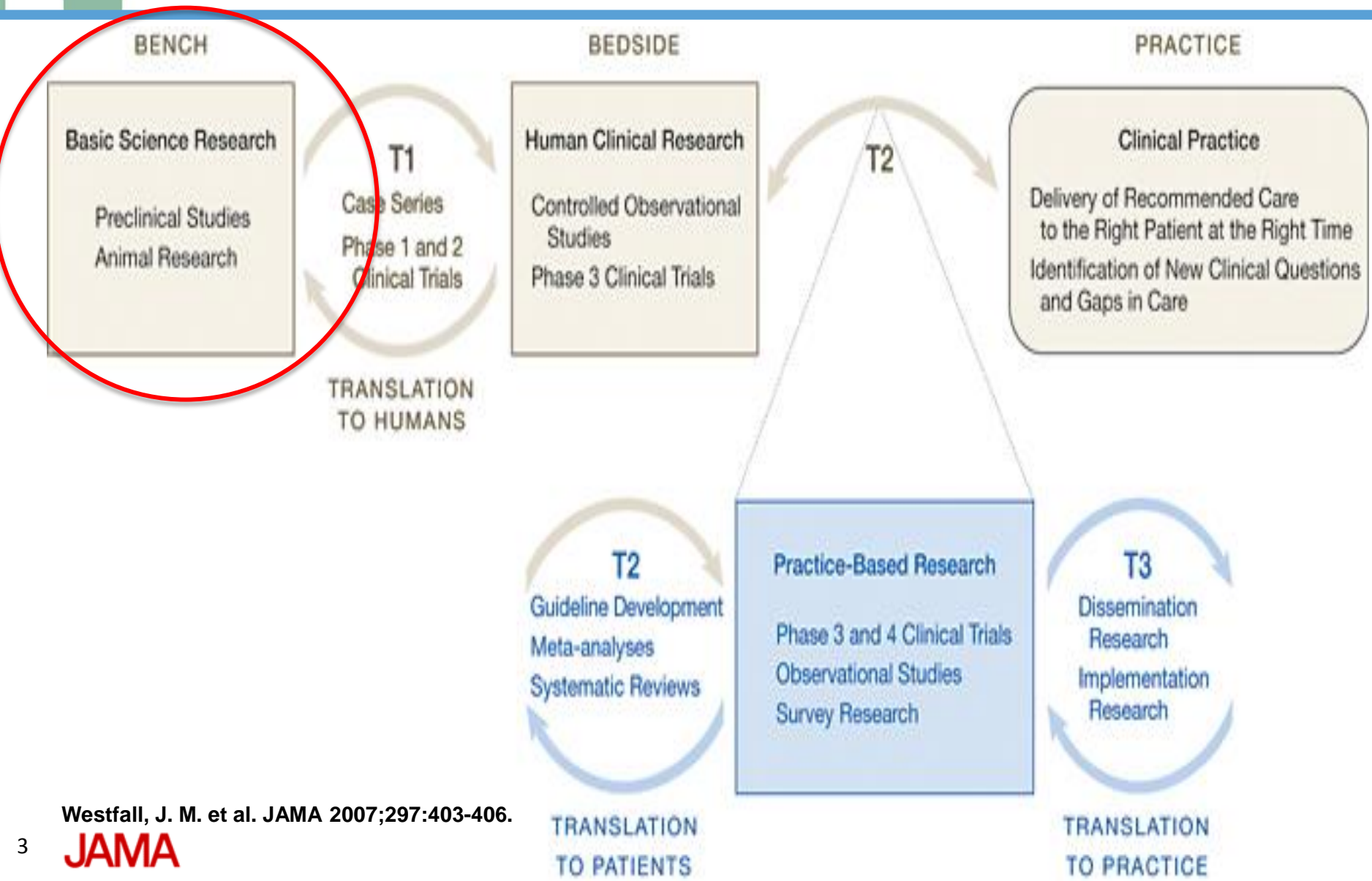
December 5, 2015

Research Continuum

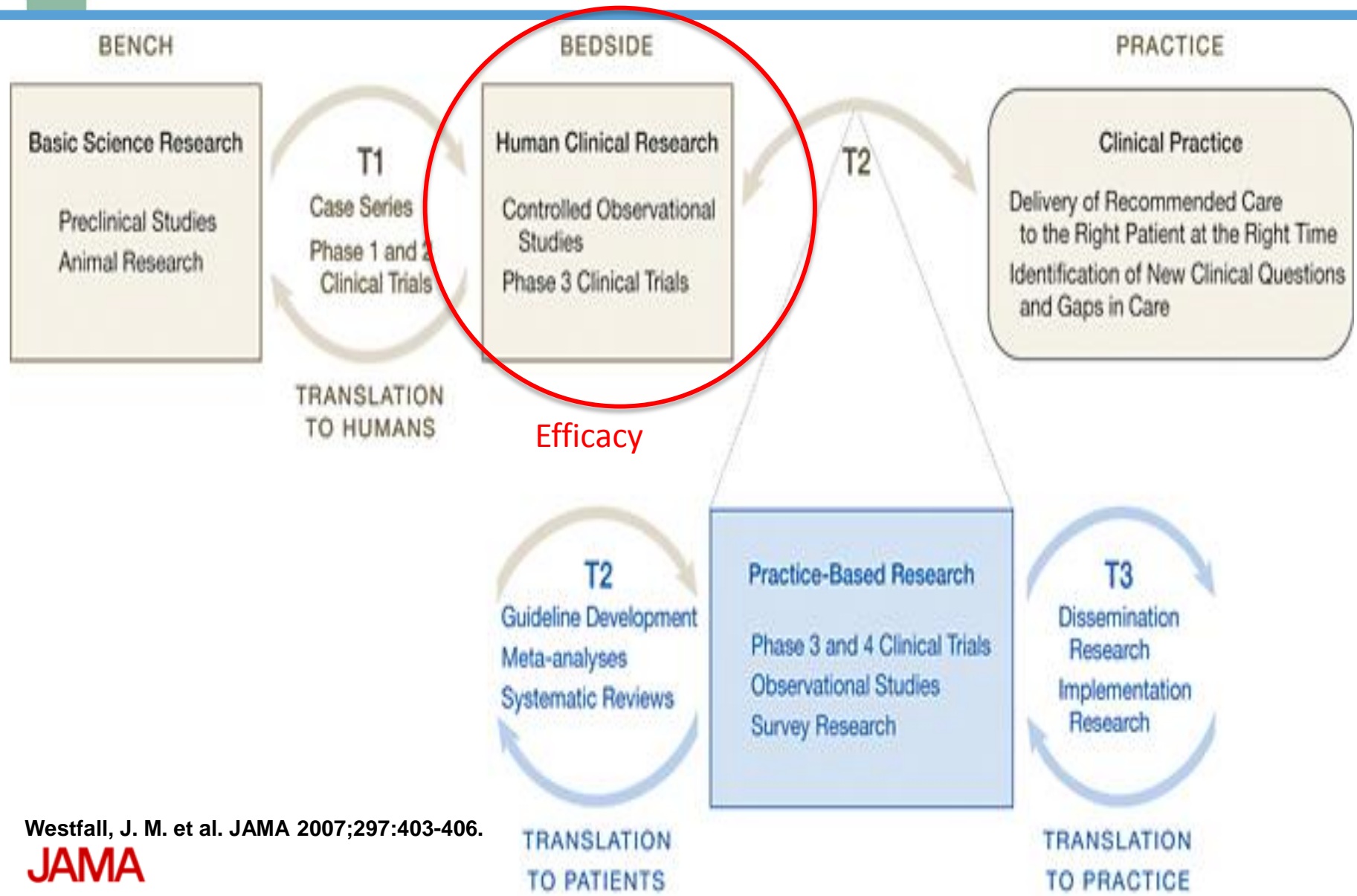


Westfall, J. M. et al. JAMA 2007;297:403-406.

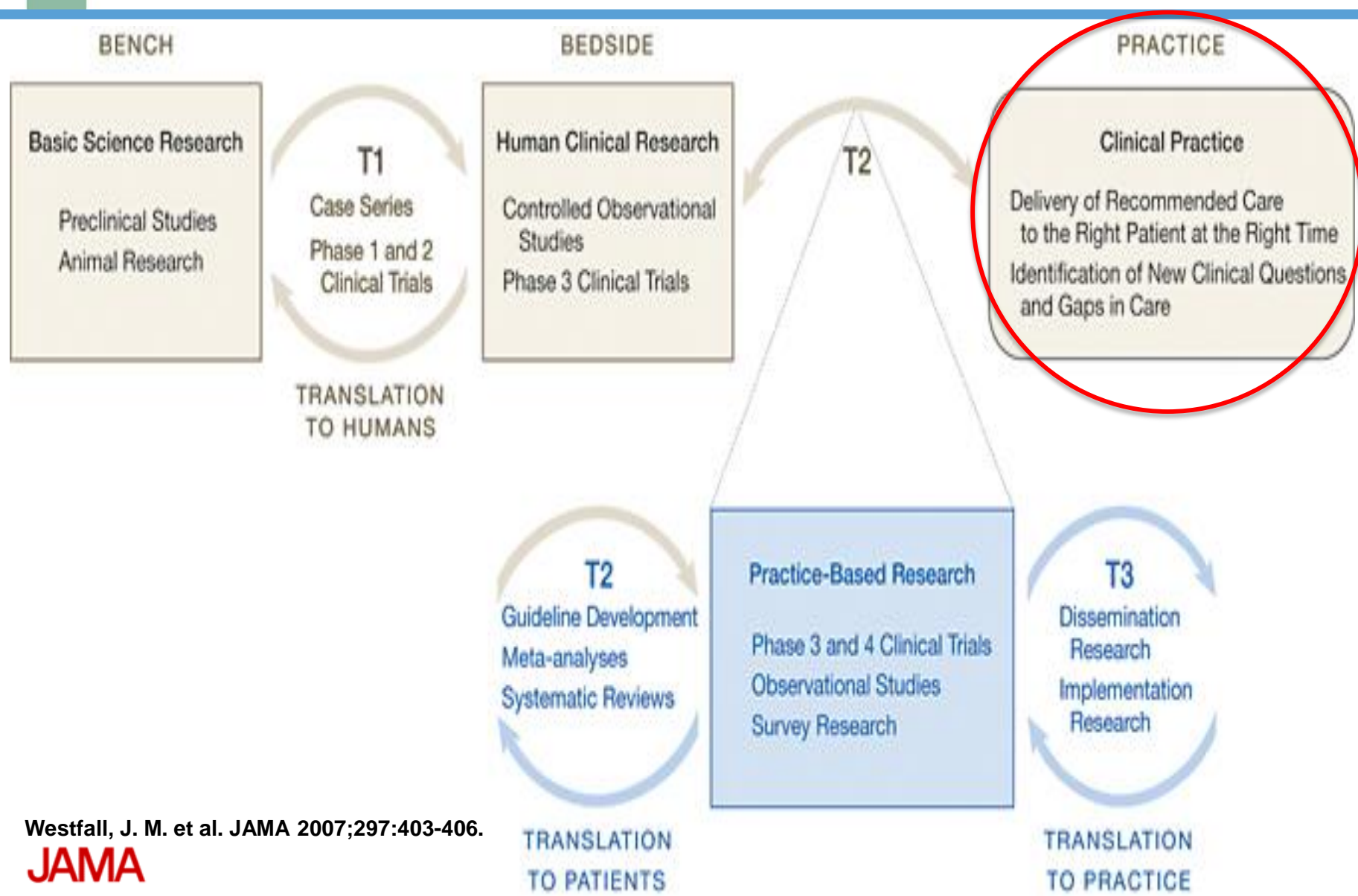
Research Continuum: Basic Science



Research Continuum: Efficacy

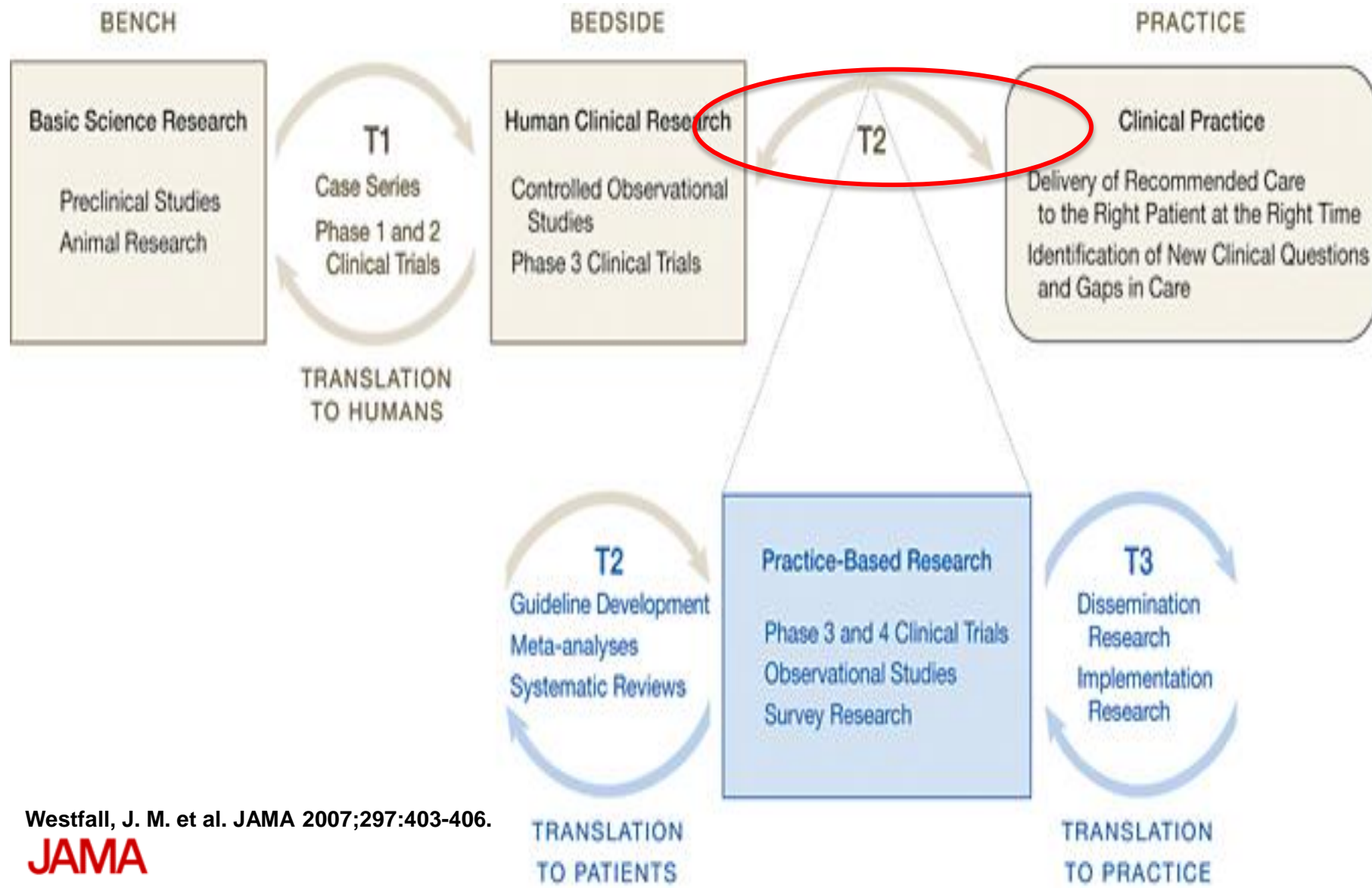


Research Continuum: Clinical Practice



Westfall, J. M. et al. JAMA 2007;297:403-406.

Research Continuum: Translational




Practice-Based Research





What is Practiced-based research?

- Practice-based research occurs in the office, clinic or hospital, where patients generally receive clinical care.
- Practice-based research can
 - identify the problems that arise in daily clinical practice that create the gap between recommended care and actual care;
 - demonstrate whether interventions with proven efficacy are truly effective and sustainable when provided in real-world setting of ambulatory care; and
 - provide the “laboratory” for testing system improvements in primary care to maximize the number of patients who benefit from medical discovery.



What is a practiced-based research network (PBRN)?

- A PBRN is a group of practices devoted principally to the clinical care of patients, affiliated with each other in order to investigate questions related to community-based practice
- PBRNs often link practicing clinicians with investigators experienced in clinical and health services research, while at the same time enhancing the research skills of the network members
- PBRNs provide a sense of ongoing commitment to the research endeavor and an organizational structure that transcends a single study



Two examples of PBR in practice

- Integrative Medicine provided at Abbott Northwestern Hospital (ANW)
- BraveNet Practice Based Research Network (PBRN)



ANW Inpatient Program History

- Started at Abbott Northwestern Hospital (ANW) in Minneapolis in 2003
- Practitioners – holistic nurse clinicians, massage therapists, acupuncturists, music therapist, reflexologist
- Services provided - initial consults, massage, acupuncture, acupressure, music therapy, reflexology, guided imagery, relaxation and stress management



Purpose of IM Inpatient Program

- Increase awareness and understanding of integrative approach in acute care
- Incorporate integrative modalities to support more comprehensive care, especially with symptom management (pain, anxiety), stress reduction and enhanced comfort
- Empower patients and staff to engage in their own healing process through education and practice of self care



Penny George Institute Therapies & Practitioners: 2015

- Patients receive individualized care including:
 - Acupuncture, acupressure
 - therapeutic medical massage, reflexology
 - mind/body therapies (e.g. relaxation response)
 - energy healing (e.g. Reiki, healing touch)
 - music therapy
 - aromatherapy
- 15 practitioners (11.5 FTEs)
 - 6.3 FTE massage therapists
 - 3.5 FTE acupuncturists
 - 0.9 FTE music therapist
 - 0.8 FTE Nursing



Penny George Institute: Process

~10,000 IM visits annually: ~4,000 unique pts.

- Physician or nurse referrals via EPIC electronic health record (EHR)
- Triage Meeting
- Medical record review by IM provider
- Treatment (24-36 hrs)
 - Intake
 - Baseline data collection (e.g., pain, anxiety, nausea)
 - IM therapy
 - Follow-up data collection
- IM provider documents in EHR

Flowsheets

FileAdd RowsAdd LDACascadeAdd ColInsert ColShow Device DataLast FiledReg DocGraphGo to DateValues ByRefreshLegend

alsAmbulatory Extended V...AMB ALLERGY INJECTIONS

PHQ DEPRESSION SCREEN...Vital SignsSEPSIS tPAED Nursing FlowsheetPrimary AssessmentSecondary AssessmentTherapeutic SessionTherapeutic Session

THERAPEUTIC SESSION TIME

PRE-THERAPEUTIC SESSION

PRE-SCORES

POST-THERAPEUTIC SESSION

POST-SCORES

SERVICES PROVIDED

ORIENTAL MEDICINE

QI, BLOOD, YIN, YANG DIAGN...

OTHER ORIENTAL MEDICINE ...

ACUPUNCTURE POINTS USED

TUNG POINTS USED

BLEEDING NOTED

ACUPUNCTURE BLEEDING SI...

PLAN OF CARE

Mode: AccordionExpandedView All

9/29/15

1300

1m5m10m15m30m1h2h4h8h24hBased On: 0700Reset Now

9/29/15 1300

Pain Score

Select Single Option: (F5)

0=0 - No pain

1=1

2=2 - Mild pain

3=3

4=4 - Moderate pain

5=5

6=6 - Severe pain

7=7

8=8 - Very severe pain

9=9

10=10 - Worst pain ever

Not rated

Comment (F6)

Row Information

The Pain Score indicates the patient's perception of their level of global, physical discomfort. Ask the patient the question "On a scale from 0 - 10, in which 0 is 'no pain' and 10 is the worst pain imaginable', please rate your pain at this moment?" Synonyms include:

Discomfort

Soreness

Stiffness

Ache

Within ANW, if the pain score is a 1 or greater, please call this patient into the Research line at x30336.

Any value or comment documented in this row will create a Pain Reassessment Due task timed 1 hour after the time column it was entered in. Documentation in the Post Score Pain Score row in a time column 30 minutes to 90 minutes after this row is documented will clear the task.

Visit Start Time

Visit End Time

Interrupt Time (minutes)

PRE-THERAPEUTIC SESSION

Group Treatment

Visit Outcome

Primary Focus of Visit

Additional Focus of Visit

Pre-scores Recorded

PRE-SCORES

Alternate Scale Used for Pre-Pain

Pain Score

Anxiety Score

Nausea Score

Ability to Cope Score

POST-THERAPEUTIC SESSION

Post-scores Recorded

POST-SCORES

Alternate Scale Used for Post-Pain

Pain Score

Anxiety Score

Nausea Score

Ability to Cope Score

SERVICES PROVIDED

Services Provided

Primary Service Provided

ORIENTAL MEDICINE

Diagnosis

QI, BLOOD, YIN, YANG DIAGNOSIS

Qi

OTHER ORIENTAL MEDICINE DIAGNOSIS

Channel Obstruction

Seen - services provided

Pain

Anxiety

Acupuncture

Acupuncture

Qi, Blood, Yin, Yang Diagnosis

Qi and Blood Stagnation

Due to Trauma

erson, Dougie
ale

Allergies
Morphine
Ragweed

 As of: 08/23/15
 TOB: Never Assessed

 WT: 59 kg (130 lb 1.1 oz)
 HT: 1.68 m (5' 6.14")
 BP: 120/80
 P: 76
 Resp: 20
 T: 99.8 °F (37.7 °C)

 SaO2: 99%
 BMI: 20.90 kg/...

 LMP: 08/23/2015
 OB/Gyn Status
 Postmenarcheal

 Insurance
MEDICA
 Type: Allina A...

 FYI: **FYI**
 HM: **Due**

 MyChart
 Inactive

AVS.

AVS:...

[Add LDA](#)
[Cascade](#)
[Add Col](#)
[Insert Col](#)
[Show Device Data](#)
[Last Filed](#)
[Reg Doc](#)
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[Values By](#)
[Refresh](#)
[Legend](#)

 Extended V... **AMB ALLERGY INJECTIONS** **PHQ DEPRESSION SCREEN...** **Vital Signs** **SEPSIS** **tPA** **ED Nursing Flowsheet** **Primary Assessment** **Secondary Assessment** **Therapeutic S**

SESSION TIME	Mode: Accordion Expanded View All		1m 5m 10m 15m 30m 1h 2h 4h 8h 24h Based On: 0700 Reset Now	09/29/15 1300
SESSION			9/29/15	
			1300	
C SESSION	THERAPEUTIC SESSION TIME			
	Visit Start Time		1307	
	Visit End Time		1341	
	Interrupt Time (minutes)		0	
NG DIAGN...	PRE-THERAPEUTIC SESSION			
	Group Treatment			
MEDICINE ...	Visit Outcome		Seen - services provided	
NTS USED	Primary Focus of Visit		Pain	
	Additional Focus of Visit		Anxiety	
	Pre-scores Recorded			
EEING SI...	PRE-SCORES			
	Alternate Scale Used for Pre-Pain			
	Pain Score			
	Anxiety Score			
	Nausea Score			
	Ability to Cope Score			
	POST-THERAPEUTIC SESSION			
	Post-scores Recorded			
	POST-SCORES			
	Alternate Scale Used for Post-Pain			
	Pain Score			
	Anxiety Score			
	Nausea Score			
	Ability to Cope Score			
	SERVICES PROVIDED			
	Services Provided		Acupuncture	
	Primary Service Provided		Acupuncture	
	ORIENTAL MEDICINE			
	Diagnosis		Qi, Blood, Yin, Yang Diagnosis	
	QI, BLOOD, YIN, YANG DIAGNOSIS			
	Qi		Qi and Blood Stagnation	
	OTHER ORIENTAL MEDICINE DIAGNOSIS			

Pain Score

Select Single Op

0=0 - No pain

1=1

2=2 - Mild pain

3=3

4=4 - Moderate

5=5

6=6 - Severe pain

7=7

8=8 - Very severe

9=9

10=10 - Worst pain

Not rated

Comment (F6)

Row Information

The Pain Score is a global, physical discomfort scale from 0 - 10, 'unimaginable', please moment?" Synonym

• Discomfort

• Soreness

• Stiffness

• Ache

Within ANW, if the patient into the Re

Any value or com

Reassessment Du

entered in. Docum

time column 30 m

documented will c

Home

Chart

Hosp Chart

Pt Lists

Encounter

Nurse Only Encounter

Telephone Call

Triage Call

Provider Finder

Harper, JeanMarie

Harper, JeanMarie

MRN: 9990003005

DOB: 07/06/1980

Age: 35 y.o.

PCP: Docson, Dougie

Sex: Female

Allergies

Morphine

Ragweed

As of: 08/23/15

TOB: Never Assessed

WT: 59 kg (130 lb 1.1 oz)

HT: 1.68 m (5' 6.14")

BP: 120/80

P: 76

Resp: 20

T: 99.8 °F (37.7 °C)

SaO2: 99%

BMI: 20.90 kg/...

LMP: 08/23/2015

OB/Gyn Status

Postmenarcheal

Insurance

MEDICA

Type: Allina A...

FYI: FYI

HM: Due

MyChart

Inactive

AVS...

TRAINING

Flowsheets

File

Add Rows

Add LDA

Cascade

Add Col

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Show Device Data

Last Filed

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Graph

Go to Date

Values By

Refresh

Legend

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Ambulatory Extended V...

AMB ALLERGY INJECTIONS

PHQ DEPRESSION SCREEN...

Vital Signs

SEPSIS

tPA

ED Nursing Flowsheet

Primary Assessment

Secondary Assessment

Therapeutic Session

Therapeutic Session

Jump to where I left off

Mode: Accordion

Expanded

View All

1m

5m

10m

15m

30m

1h

2h

4h

8h

24h

Based On: 0700

Reset

Now

09/29/15 1300

Therapeutic Session T...

PRE-THERAPEUTIC SESSION

PRE-SCORES

POST-THERAPEUTIC SESSION

POST-SCORES

SERVICES PROVIDED

ORIENTAL MEDICINE

QI, BLOOD, YIN, YANG DIAGN...

OTHER ORIENTAL MEDICINE ...

ACUPUNCTURE POINTS USED

TUNG POINTS USED

BLEEDING NOTED

ACUPUNCTURE BLEEDING SI...

PLAN OF CARE

9/29/15

1300

ACUPUNCTURE POINTS USED

Signed Acupuncture Consent Form

ElectroAcupuncture

Low Level Light Therapy (aka Laser)

Lung (LU)

Large Intestine (LI)

Stomach (ST)

Spleen (SP)

Heart (HT)

Small Intestine (SI)

Bladder (BL or UB)

Kidney (K)

Pericardium (P or PC)

San Jiao (SJ)

Gall Bladder (GB)

Liver (LV)

Du Mai (DU)

Ren Mai (RN)

Extra Points Used

Bilateral Auricular Points Used

Left Auricular Points Used

Right Auricular Points Used

Scalp Points Used

Tung Points Used?

TUNG POINTS USED

Tung 11.00 (Finger)

Tung 22.00 (Palm/Dorsal Hand)

Tung 33.00 (Forearm)

Tung 44.00 (Arm)

Tung 55.00 (Sole)

Tung 66.00 (Dorsal Foot)

Tung 77.00 (Leg)

Tung 88.00 (Thigh)

Yes

7 right

4 left

36 bilate...

6 left

3 bilateral

Yin Tang

Shen Men

Yes

22.04 lef...

Visit Start Time

1307

Comment (F6)

Value Information

1307

Taken by:

Reinstein, Adam S at 09/29/15 1300 (today)

Recorded by:

Reinstein, Adam S at 09/29/15 1307 (today)

Row Information

Visit start time is defined as the earliest of these times:

A. The time you entered the patient's room to provide services.

B. The time you entered the patient's room and no services were provided.

C. The time you entered the patient's room to attempt a visit, but the patient was unavailable.

D. The time you arrived and then waited until another practitioner completed their work with the patient – note the time you arrive.

ADAM R.

Future/Standing Orders

1:33 PM

9/29/2015

Docson, Doug
FemaleAllergies
Morphine
RagweedAs of: 08/23/15
TOB: Never AssessedWT: 59 kg (130 lb 1.1 oz)
HT: 1.68 m (5' 6.14")
BP: 120/80
P: 76
Resp: 20
T: 99.8 °F (37.7 °C)SaO2: 99%
BMI: 20.90 kg/...LMP: 08/23/2015
OB/Gyn Status
PostmenarchealInsurance
MEDICA
Type: Allina A...FYI: **FYI**
HM: **Due**MyChart
Inactive
AVS
AVS:...
[Add LDA](#) [Cascade](#) [Add Col](#) [Insert Col](#) [Show Device Data](#) [Last Filed](#) [Reg Doc](#) [Graph](#) [Go to Date](#) [Values By](#) [Refresh](#) [Legend](#)
[History Extended V...](#) [AMB ALLERGY INJECTIONS](#) [PHQ DEPRESSION SCREEN...](#) [Vital Signs](#) [SEPSIS](#) [tPA](#) [ED Nursing Flowsheet](#) [Primary Assessment](#) [Secondary Assessment](#) [Therapeutic](#)
[SESSION T...](#) [JUMP TO WHERE I LEFT OFF](#) Mode: [Accordion](#) [Expanded](#) [View All](#) [1m](#) [5m](#) [10m](#) [15m](#) [30m](#) [1h](#) [2h](#) [4h](#) [8h](#) [24h](#) Based On: 0700 | [Reset](#) [Now](#) 09/29/15 1300

[UTIC SESSION](#) [1300](#)
[UTIC SESSION](#) [ACUPUNCTURE POINTS USED](#)
[VIDED](#) [Signed Acupuncture Consent Form](#) [Yes](#)
[ICINE](#) [ElectroAcupuncture](#)
[, YANG DIAGN...](#) [Low Level Light Therapy \(aka Laser\)](#)
[AL MEDICINE ...](#) [Lung \(LU\)](#) [7 right](#)
[POINTS USED](#) [Large Intestine \(LI\)](#) [4 left](#)
[USED](#) [Stomach \(ST\)](#) [36 bilate...](#)
[TED](#) [Spleen \(SP\)](#) [6 left](#)
[BLEEDING SI...](#) [Heart \(HT\)](#)
[Kidney \(K\)](#)
[Pericardium \(P or PC\)](#)
[San Jiao \(SJ\)](#)
[Gall Bladder \(GB\)](#)
[Liver \(LV\)](#) [3 bilateral](#)
[Du Mai \(DU\)](#)
[Ren Mai \(RN\)](#)
[Extra Points Used](#) [Yin Tang](#)
[Bilateral Auricular Points Used](#) [Shen Men](#)
[Left Auricular Points Used](#)
[Right Auricular Points Used](#)
[Scalp Points Used](#)
[Tung Points Used?](#) [Yes](#)
[TUNG POINTS USED](#)
[Tung 11.00 \(Finger\)](#)
[Tung 22.00 \(Palm/Dorsal Hand\)](#) [22.04 lef...](#)
[Tung 33.00 \(Forearm\)](#)
[Tung 44.00 \(Arm\)](#)
[Tung 55.00 \(Sole\)](#)
[Tung 66.00 \(Dorsal Foot\)](#)
[Tung 77.00 \(Leg\)](#)

09/29/15 1300

Visit Start Time

1307

Comment (F6)

Value Inform

1307

Taken by:

Reinstein, A

Recorded by:

Reinstein, A

Row Informa

Visit start time

A. The time yo

B. The time yo

provided.

C. The time yo

the patient was

D. The time yo

completed thei

PCP: Docson, Dougie
Sex: Female**Allergies**
Morphine
RagweedAs of: 08/23/15
TOB: Never AssessedWT: 59 kg (130 lb 1.1 oz)
HT: 1.68 m (5' 6.14")
BP: 120/80
P: 76
Resp: 20
T: 99.8 °F (37.7 °C)SaO2: 99%
BMI: 20.90 kg/m²LMP: 08/23/2015
OB/Gyn Status
PostmenarchealInsurance
MEDICA
Type: Allina A...FYI: FYI
HM: DueMyChart
Inactive
AVS
AVS:...

sheets

Add Rows Add LDA Cascade Add Col Insert Col Show Device Data Last Filed Reg Doc Graph Go to Date Values By Refresh Legend

Ambulatory Extended V... AMB ALLERGY INJECTIONS PHQ DEPRESSION SCREEN... Vital Signs SEPSIS tPA ED Nursing Flowsheet Primary Assessment Secondary Assessment Therapeutic Session Ther

THERAPEUTIC SESSION TIME

Jump to where I left off Mode: Accordion Expanded View All

1m 5m 10m 15m 30m 1h 2h 4h 8h 24h Based On: 0700 Reset Now

09/29/15 1300

THERAPEUTIC SESSION

9/29/15

1300

Visit Start Time

1307

THERAPEUTIC SESSION

Comment (F6)

THERAPEUTIC SESSION

Left Auricular Points Used

THERAPEUTIC SESSION

Right Auricular Points Used

THERAPEUTIC SESSION

Scalp Points Used

THERAPEUTIC SESSION

Tung Points Used?

Yes

THERAPEUTIC SESSION

TUNG POINTS USED

THERAPEUTIC SESSION

Tung 11.00 (Finger)

THERAPEUTIC SESSION

Tung 22.00 (Palm/Dorsal Hand)

22.04 left - Dabai; 22.05 left - Linggu

THERAPEUTIC SESSION

Tung 33.00 (Forearm)

THERAPEUTIC SESSION

Tung 44.00 (Arm)

THERAPEUTIC SESSION

Tung 55.00 (Sole)

THERAPEUTIC SESSION

Tung 66.00 (Dorsal Foot)

THERAPEUTIC SESSION

Tung 77.00 (Leg)

THERAPEUTIC SESSION

Tung 88.00 (Thigh)

THERAPEUTIC SESSION

Tung 99.00 (Ear)

THERAPEUTIC SESSION

Tung 1010.00 (Head/Face)

THERAPEUTIC SESSION

Tung DT.00 (Back)

THERAPEUTIC SESSION

Tung VT.00 (Chest/Abdomen)

THERAPEUTIC SESSION

Tung A.00 (Extra)

THERAPEUTIC SESSION

BLEEDING NOTED

THERAPEUTIC SESSION

Bleeding noted at site?

Yes

THERAPEUTIC SESSION

ACUPUNCTURE BLEEDING SITE #1

THERAPEUTIC SESSION

Affected Meridian

SPL - Spleen Left

THERAPEUTIC SESSION

Specific Point

6

THERAPEUTIC SESSION

Extra Points Used

THERAPEUTIC SESSION

Left Auricular Points Used

THERAPEUTIC SESSION

Right Auricular Points Used

THERAPEUTIC SESSION

Scalp Points Used

THERAPEUTIC SESSION

Quantity of Bleeding

Just a Drop: small spot on Q-tip

THERAPEUTIC SESSION

Needle Gauge

40 gauge / .16 / Red Seirin

THERAPEUTIC SESSION

Needling Description

Moderate (0.5 - 1.0 cun insertion depth)

THERAPEUTIC SESSION

Additional Point with Bleeding noted?

No

THERAPEUTIC SESSION

PLAN OF CARE

THERAPEUTIC SESSION

Follow Up Visit?

No

Value Information

1307

Taken by:

Reinstein, Adam S at 09/29/15 13:00

Recorded by:

Reinstein, Adam S at 09/29/15 13:00

Row Information

Visit start time is defined as the earliest of the following:

A. The time you entered the patient's information.

B. The time you entered the patient's visit start time.

C. The time you entered the patient's visit end time.

D. The time you arrived and then worked with the patient.



Impact on Pain Management

- Participants: 1837 patients hospitalized between January 1, 2008 and June 30, 2009.
- Measurements: Pretreatment and post-treatment pain scores on a verbal scale of 0 to 10.
- Results: Most patients (66%) had never previously received any integrative services.
- The average reduction in pain was 1.9 points and the average percentage in pain reduction was 55%.
- No differences across clinical populations (small sample size).

Source: Dusek JA, Finch M, Plotnikoff GA, Knutson L. The Impact of Integrative Medicine on Pain Management in a Tertiary Care Hospital. J Pat Safety 2010; 6(1):48-51.

The Impact of Integrative Medicine on Pain Management in a Tertiary Care Hospital

Jeffery A. Dusek, PhD,* Michael Finch, PhD,† Gregory Plotnikoff, MD, MTS, FACP‡
and Lori Knutson, RN, BSN, HN-BC§ and on behalf of the Penny George Institute for Health
and Healing Inpatient Care Team

Background: Optimal inpatient pain management remains a major institutional and therapeutic challenge. Nontoxic, nonpharmacological approaches to treating pain show promise but have not been widely implemented, nor has their effectiveness been evaluated.

Aims: To evaluate the effectiveness of an inpatient integrative medicine consult service for pain management in 6 settings across an entire tertiary care hospital.

Design: Retrospective, observational study.

Setting: Abbott Northwestern Hospital, a 629-bed tertiary-care hospital in Minneapolis, Minn, that is part of Allina Hospitals & Clinics.

Participants: Approximately 1837 patients hospitalized between January 1, 2008, and June 30, 2009.

Measurements: Pretreatment and posttreatment pain scores on a verbal scale of 0 to 10.

Results: Most patients (66%) had never previously received integrative services. Provision of integrative services had immediate and beneficial effects on pain scores. The average reduction in pain scores was 1.9 points (on a 10-point scale), and the average percentage in pain reduction was approximately 55%.

Conclusions: The formal provision of inpatient integrative medicine had a significant impact on pain scores for hospitalized patients, reducing self-reported pain by more than 50%, without placing patients at increased risk of adverse effects. This was true in all 6 settings. Age, previous use of complementary therapies, and sex did not affect results. Future research must define the appropriate dose of the intervention, the duration of the relief, and the identification of patients most likely to respond to these nonpharmacological treatments. Additionally, future research using the electronic health record will allow quantification of any reduction in total costs, pain medication usage, and adverse events.

Key Words: integrative medicine, pain management

(*J Patient Saf* 2010;6: 48–51)

Optimal inpatient pain management remains a major institutional and therapeutic challenge. Roughly 80% of patients report moderate to severe pain levels after surgery.¹ Since at least 2001, the Joint Commission has held acute care hospitals accountable for the assessment, documentation, and management of pain.^{2,3} This has undoubtedly improved the quality of pain management. Now, health care leaders must face the next

level question: how can institutional policies emphasize effective pain control and simultaneously avoid side effects of opioid medications including respiratory depression, clouded mentation, hypotension, nausea, constipation, dizziness, and presumably, falls?⁴ For many providers, these dueling concerns represent a clinical dilemma that is not well answered when pain management guidelines emphasize pharmaceutical interventions.

The National Quality Forum's recent report, *Safe Practices for Better Healthcare—2009 Update*, establishes the importance of addressing both safety and quality. Specifically, this report queries how the current health care system can better manage pain (improve quality) while simultaneously reducing side effects (improve safety).⁵ The report further states that "There is strong evidence that integrative care can heal and improve basic conventional care by addressing the mind, body and spirit connection."⁶ Integrative medicine (IM) refers to the blend of conventional medical practices and nonpharmacological, complementary practices⁷ by using all appropriate therapeutic approaches to attain optimal health and healing. Integrative medicine strives to achieve wholeness and health as well as cure illness and disease. Recent systematic reviews from the Cochrane Collaboration and others indicate efficacy of various nonpharmacological, integrative approaches for pain management in hospitalized patient populations, including obstetrics,^{8–11} surgical,^{12–14} and postoperative and cancer-related nausea and vomiting.^{15,16} These approaches avoid the adverse reactions associated with the predominate reliance on opioid medications for pain management. Even the Food and Drug Administration's Janet Woodcock, writing in the *New England Journal of Medicine*, has noted that nontoxic, nonpharmacological approaches to treating pain (e.g., mind-body skills development) show promise.¹⁷

Research studies of nonpharmacological, integrative methods to manage pain have shown both efficacy and the potential for reduced risk of side effects (e.g., safety). However, these studies have been silent, if not mute, on the subject of the effectiveness of these approaches. Can these approaches be implemented in real time, across and under real operational and financial constraints within an acute care hospital? Although randomized controlled trials are the accepted standard of clinical research, careful observational studies are invaluable as they provide an opportunity to assess what approaches are acceptable to patients and clinical care providers. They can be implemented in conventional treatment settings¹⁸ and, we contend, could improve pain management.

The purpose of this observational study was to evaluate the effectiveness of an IM medicine pain management approach for patients across an entire tertiary care hospital. We hypothesize that it will be feasible to conduct an IM consult service for pain management across the hospital and that the integrative care will reduce patients' self-reported pain scores.

IM INTERVENTION

The Penny George Institute for Health and Healing (George Institute) is the Integrative Medicine Department at Abbott

From the *Penny George Institute of Health and Healing, Abbott Northwestern Hospital; †Finch and King, Inc; ‡Penny George Institute of Health and Healing, Abbott Northwestern Hospital; and §Penny George Institute of Health and Healing, Abbott Northwestern Hospital, Minneapolis, Minnesota. Correspondence: Jeffery A. Dusek, PhD, Director of Research, Penny George Institute of Health and Healing, Abbott Northwestern Hospital, Minneapolis, MN 55407 (e-mail: jeffery.dusek@allina.com). Sources of support: Funding support for this article was provided by George Family Foundation, Abbott Northwestern Hospital and the Abbott Northwestern Hospital Foundation. Jeffery A. Dusek, PhD, Michael Finch, PhD, Gregory A. Plotnikoff, MD, MTS, FACP, Lori Knutson RN, BSN, HSC on behalf of the Penny George Institute for Health and Healing Inpatient Care Team. Copyright © 2010 by Lippincott Williams & Wilkins



Conclusions

- Initial evidence that adjunctive IM therapies substantially reduce both short-term pain and anxiety among inpatients.
- However...
 - How does the IM referral process work?
 - Would one see the same 55% reduction in a larger sample?
 - Are specific therapies more effective in clinical populations?
 - What is the duration of pain relief?

National Institute of Health grant- 2011-2016

Project Number: 5R01AT006518-03
Title: EFFECT OF COMPLEMENTARY AND ALTERNATIVE MEDICINE ON PAIN
AMONG INPATIENTS

Contact PI / Project Leader: [DUSEK, JEFFERY A](#)
Awardee Organization: ALLINA HEALTH SYSTEM

Abstract Text:

DESCRIPTION (provided by applicant): Effective and safe pain management is a major health priority for the US healthcare system. Pharmaceutical interventions remain the primary approach to pain management, despite their well documented risk of adverse events, potential for addiction, and adverse impact on recovery if used excessively. Nowhere is this more evident than in the post-operative period where roughly 80% of patients report moderate to severe pain after surgery even after receiving pharmaceutical interventions. In inpatient settings, finding an effective non-pharmacologic intervention to augment narcotic medications would be a significant benefit. National surveys indicate that complementary and alternative medicine (CAM) interventions are currently used by 15% of American hospitals. Most often, these therapies are employed to address specific unmet clinical needs, the most frequent of which is pain. Eleven clinical trials have demonstrated the efficacy of CAM therapies to reduce pain (short- and long-term) in hospitalized patients along with traditional pharmaceutical interventions. Generating additional evidence of the effectiveness of these therapies for pain relief would advance knowledge and potentially affect practice patterns. In a preliminary study, we retrospectively studied 1,837 patients who received CAM therapies at Abbott Northwestern Hospital. We found an average reduction in immediate pain of 56% and roughly 33% reported complete pain relief after the initial CAM visit. We recognize inadequacies of this study that limit both our knowledge of how adjunctive CAM therapies are implemented in hospitals and the effect of various CAM therapies on pain management, which can only be answered with prospective data collection. Using a prospective, observational design, we propose a large scale study to build on this exploratory work. It will document predictors of CAM referral, service delivery, and therapy selection for pain management. It will also examine the impact of CAM therapies as adjuncts to traditional interventions on short and long-term changes in pain across clinical groups in a hospital setting. The setting for this study of CAM is the Penny George Institute for Health and Healing at Abbott Northwestern Hospital. The George Institute is uniquely suited for this work as it is the nation's largest inpatient CAM program serving over 19,000 patients since 2004. The proposed study has 3 aims: 1) quantitatively describe a model for delivering CAM therapies to understand selection of patients and CAM therapies for pain management, 2) examine the effects of selected CAM therapies on immediate change in pain, and 3) examine the effects of selected CAM therapies on duration of pain change. Positive results from this study will assist hospitals in the integration of usual care and CAM therapy for pain reduction. Findings may also drive future research on the cost effectiveness of these therapies for pain management, as well as impact on patient outcomes such as length of stay and use of narcotics.



NCCIH funded observational R01: (2011-2016)

- Aim 1: Understand selection of patients and IM therapies for pain management,
- Aim 2: Examine the effects of therapies on immediate change in pain
- Aim 3: Examine the effects on duration of pain management



Update on Status of NIH R01

- Study data collection:
 - Time period: 7/12 to 12/14 (30 months)
 - Databases undergoing final analyses.
 - Analyses & manuscripts: by end of May 2016



Update on Status of NIH R01

- Study data collection:
 - Time period: 7/12 to 12/14 (30 months)
 - Databases undergoing final analyses.
 - Analyses & manuscripts: by end of May 2016
- Assembled a test database 7/1/09 to 12/31/12:
 - To test analysis models.
 - Focus on certain clinical populations.
 - Oncology, cardiology and joint replacement.



Group Acupuncture for Joint Replacement

- Fast-track joint replacement surgery is becoming more popular to reduce stays



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- About 33% report moderate to severe pain



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Group Acupuncture for Joint Replacement

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- About 33% report moderate to severe pain
- Pain medications (including opioids) can result in sedation which limits patients participation in rehabilitation
- Current joint replacement recommendations urge reduction of opioids in favor of multi-modal approaches



AQ in Joint replacement: Procedures

- Surgery performed on the 1st day of admission



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- Acupuncturists meet patients morning of post-op day to invite to afternoon AQ session



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AQ in Joint replacement: Procedures

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- Acupuncturists meet patients morning of post-op day to invite to afternoon AQ session
- Group physical therapy: 1:30 to 2:15pm
- Group AQ: follows immediately afterwards on 1st and 2nd day post-op
- Consensus Points include:
 - LI11, LI4 bilaterally; ST 36, GB34, SP6, and LV 3 on the nonsurgical extremity; and auricular points Hip or Knee Joint and Ear Shen Men.
- Average treatment time was 41.3 minutes (standard deviation of 12.5 minutes).

Group AQ in Joint Replacement: Pain Analysis

Pre- to post-IM therapy percent decrease in pain scores

		Any Joint Replacement
Any Treatment	No. Pain Obs	1,977
	Unit Decrease in Pain	-1.91 (-45.2%)
	95% CI	(1.83-1.99)
	p-value	<0.001
Day 1	No. Anxiety Obs	1,259
	Unit Decrease in Pain	-1.79 (-38.8%)
	95% CI	(1.69 – 1.89)
	p-value	<0.001
Day 2	No. Anxiety Obs	718
	Unit Decrease in Pain	- 2.14 (59.9%)
	95% CI	(2.01 – 2.26)
	p-value	<0.001

41% of patients had moderate/severe pain prior to receiving AQ and only 15% of patients had moderate/severe pain after receiving acupuncture.

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Acupuncture Provides Short-Term Pain Relief for Patients in a Total Joint Replacement Program

Daniel J. Crespin, MSPH,^{*}
Kristen H. Griffin, MA, MPH,[†]
Jill R. Johnson, PhD, MPH,[†] Cynthia Miller, RN, LAc,[‡]
Michael D. Finch, PhD,[§] Rachael L. Rivard, BS,[†]
37 Scott Anseth, MD,[¶] and Jeffery A. Dusek, PhD[†]

Oncology: Pain and Anxiety Analysis

Pre- to post-IM therapy change in pain and anxiety scores

No. Pain Observations	1,514
% Change in Pain	-46.9
p-value	<0.001

No. Anxiety Observations	1,074
% Change in Anxiety	-56.1
p-value	<0.001

Effects of Integrative Medicine on Pain and Anxiety Among Oncology Inpatients

Jill R. Johnson, Daniel J. Crespín, Kristen H. Griffin, Michael D. Finch, Jeffery A. Dusek

Correspondence to: Jill R. Johnson, PhD, MPH, Penny George Institute for Health and Healing, 800 East 28th Street, MR 33540, Minneapolis, MN 55407-3799 (e-mail: Jill.Johnson3@allina.com)

Background	Few studies have investigated the effectiveness of integrative medicine (IM) therapies on pain and anxiety among oncology inpatients.
Methods	Retrospective data obtained from electronic medical records identified patients with an oncology International Classification of Diseases-9 code who were admitted to a large Midwestern hospital between July 1, 2009 and December 31, 2012. Outcomes were change in patient-reported pain and anxiety, rated before and after individual IM treatment sessions, using a numeric scale (0–10).
Results	Of 10948 hospital admissions over the study period, 1833 (17%) included IM therapy. Older patients had reduced odds of receiving any IM therapy (odds ratio [OR]: 0.97, 95% confidence interval [95% CI] = 0.96 to 0.98) and females had 63% (OR: 1.63, 95% CI = 1.38 to 1.92) higher odds of receiving any IM therapy compared with males. Moderate (OR: 1.97, 95% CI = 1.61 to 2.41), major (OR: 3.54, 95% CI = 2.88 to 4.35), and extreme (OR: 5.96, 95% CI = 4.71 to 7.56) illness severity were significantly associated with higher odds of receiving IM therapy compared with admissions of minor illness severity. After receiving IM therapy, patients averaged a 46.9% (95% CI = 45.1% to 48.6%, $P < .001$) reduction in pain and a 56.1% (95% CI = 54.3% to 58.0%, $P < .001$) reduction in anxiety. Bodywork and traditional Chinese Medicine therapies were most effective for reducing pain, while no significant differences among therapies for reducing anxiety were observed.
Conclusions	IM services to oncology inpatients resulted in substantial decreases in pain and anxiety. Observational studies using electronic medical records provide unique information about real-world utilization of IM. Future studies are warranted and should explore potential synergy of opioid analgesics and IM therapy for pain control.

J Natl Cancer Inst Monogr 2014;50:330–337

Cardiovascular: Pain and Anxiety Analysis

Pre- to post-IM therapy percent decrease in pain and anxiety scores

		Any Cardiovascular Disease
Any Treatment	No. Pain Obs	5,981
	% Decrease in Pain	-46.5
	95% CI	(45.5 – 47.4)
	p-value	<0.001
	No. Anxiety Obs	3,109
	% Decrease in Anxiety	-54.8
	95% CI	(53.7 – 55.9)
	p-value	<0.001

RESEARCH ARTICLE

Open Access

The effectiveness of integrative medicine interventions on pain and anxiety in cardiovascular inpatients: a practice-based research evaluation

Jill R Johnson^{1*}, Daniel J Crespin², Kristen H Griffin¹, Michael D Finch³, Rachael L Rivard¹, Courtney J Baechler¹ and Jeffery A Dusek¹

Abstract

Background: Pain and anxiety occurring from cardiovascular disease are associated with long-term health risks. Integrative medicine (IM) therapies reduce pain and anxiety in small samples of hospitalized cardiovascular patients within randomized controlled trials; however, practice-based effectiveness research has been limited. The goal of the study is to evaluate the effectiveness of IM interventions (i.e., bodywork, mind-body and energy therapies, and traditional Chinese medicine) on pain and anxiety measures across a cardiovascular population.

Methods: Retrospective data obtained from medical records identified patients with a cardiovascular ICD-9 code admitted to a large Midwestern hospital between 7/1/2009 and 12/31/2012. Outcomes were changes in patient-reported pain and anxiety, rated before and after IM treatments based on a numeric scale (0-10).

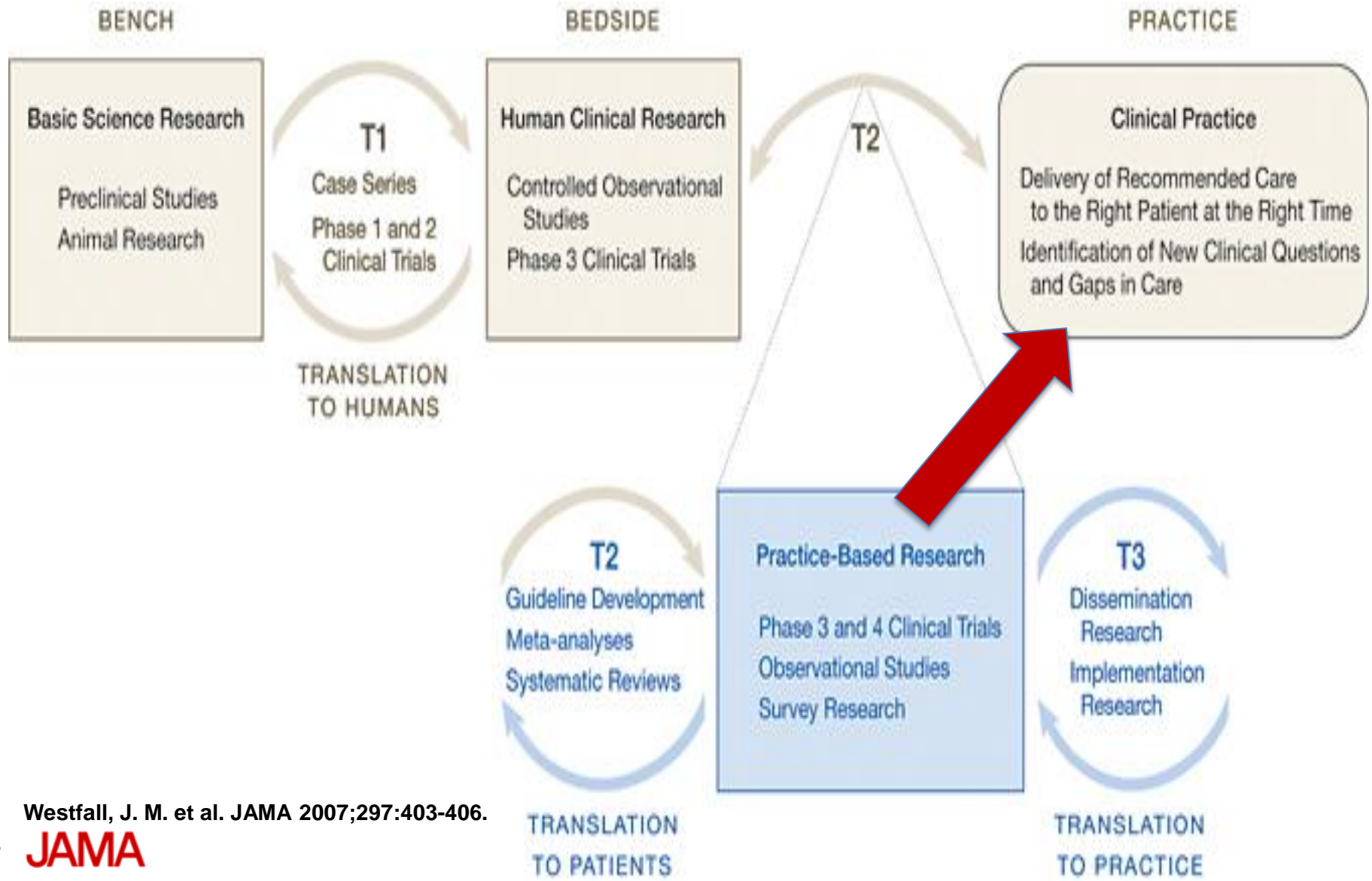
Results: Of 57,295 hospital cardiovascular admissions, 6,589 (11.5%) included IM. After receiving IM therapy, patients averaged a 46.5% (p-value < 0.001) decrease in pain and a 54.8% (p-value < 0.001) decrease in anxiety. There was no difference between treatment modalities on pain reduction; however, mind-body and energy therapies (p-value < 0.01), traditional Chinese medicine (p-value < 0.05), and combination therapies (p-value < 0.01) were more effective at reducing anxiety than bodywork therapies. Each additional year of age reduced the odds of receiving any IM therapy by two percent (OR: 0.98, p-value < 0.01) and females had 96% (OR: 1.96, p-value < 0.01) higher odds of receiving any IM therapy compared to males.



Conclusions

- Results provide evidence that IM therapies substantially reduce both short-term pain and anxiety among various inpatients.
- Future studies are warranted and could explore:
 - Potential synergy of opioid analgesics and IM therapy.
 - Longer-term effects of IM on pain and anxiety.
 - Cost effectiveness of IM therapy for inpatients.
 - Biological mechanisms of action.

Practice-Based Research



Collaborators and Funding Source

- Pamela Jo Johnson PhD, Co-Investigator (U of M)
 - Jon Christianson PhD, Economist (U of M)
 - Michael Finch PhD, Methodologist (U of M)
 - Rachel Rivard, Biostatistician
 - Desiree Trebesch MA, Study Coordinator
 - Kristen Griffin MA, MPH, Scientific Advisor
 - Adam Reinstein MaOM, LAc Acupuncturist
 - Kelly McBride LAc, Acupuncturist
-
- Jill Johnson PhD, Epidemiologist
 - Alison Kolste, Study Coordinator
 - Dan Crespín, Methodologist
 - Robert Jones, Senior Research Assistant
 - Caitlin Dreier, Research Assistant
 - Stephanie Wallerius, Research Assistant
 - Nichole Janssen, Research Assistant
 - Sirri Ngwa, Research Assistant

The project is supported by grant R01 AT006518 from the National Center for Complementary and Integrative Health (NCCIH) to JD.



BraveNet: Integrative Medicine Practice-Based Research Network

Jeffery Dusek, PhD

BraveNet Executive Committee member

PRIMIER, CO-PI



What is BraveNet?

- A practice-based research network made up of nineteen leading integrative medicine centers around the U.S.
- Established in 2007 with funding from the Bravewell Collaborative
- Charged with collaborating in projects to increase the knowledge and evidence-based practice of integrative medicine



BraveNet Mission

To advance integrative medicine by:

- Collecting and analyzing data on use, effectiveness, safety, cost, and patient satisfaction with integrative medicine
- Creating an atmosphere of collaboration that stimulates and supports innovation in integrative medicine
- Contributing to the scientific credibility of integrative medicine
- Facilitating the dissemination of information that will influence the practice of medicine and creation of healthcare policy
- Providing a way to improve care at each practice and clinic
- Providing a way to work collaboratively to develop new methods of care



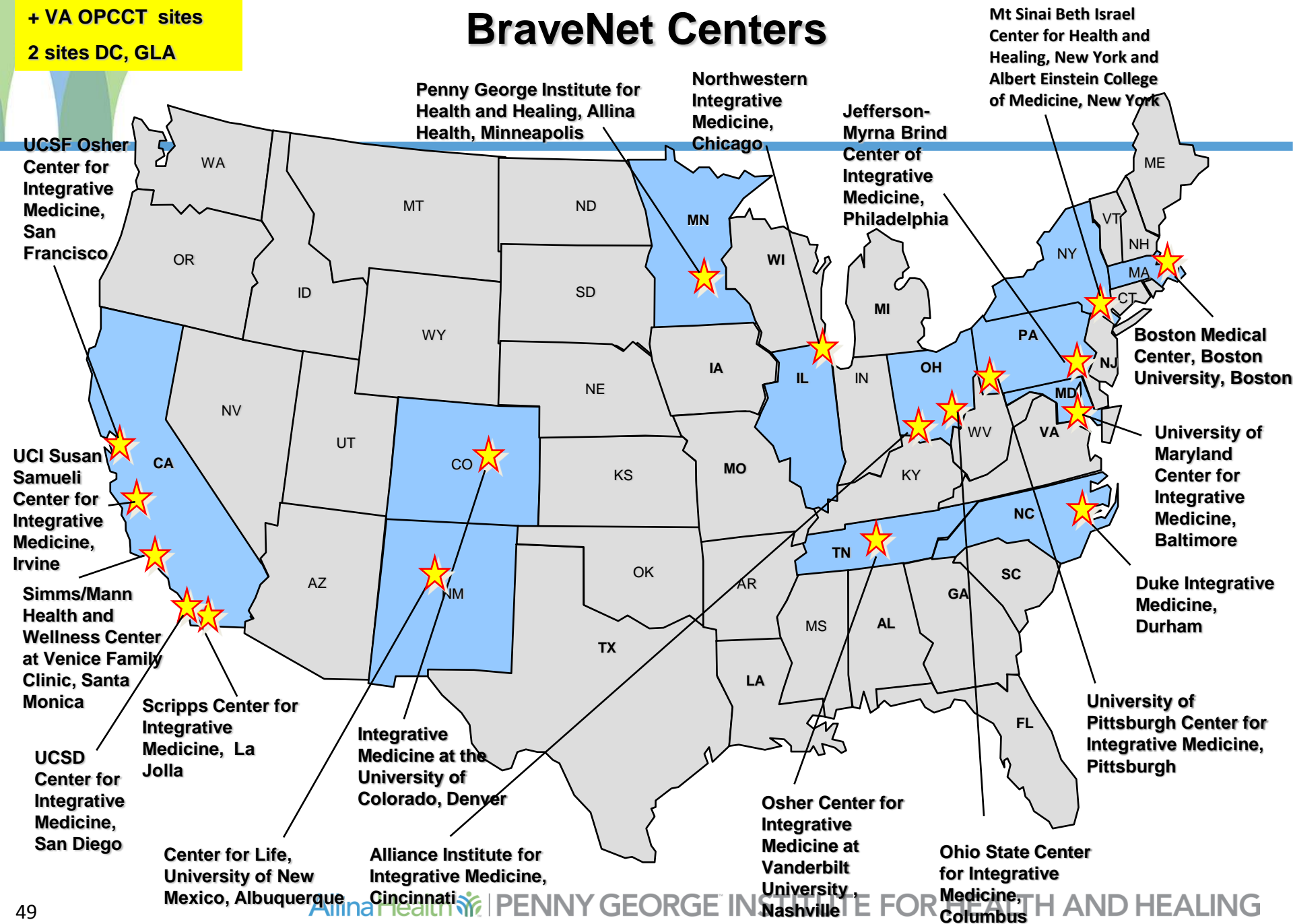
BraveNet Structure

- Executive Committee
 - Benjamin Kligler, MD, BraveNet Chair
 - Jeffery Dusek, PhD, PRIMIER Co-PI
 - Donald Abrams, MD, PRIMIER Co-PI
 - Coordinating Center PI and PL
- Steering Committee (site representatives)
- Coordinating Ctr (Einstein College of Medicine)
 - M. Diane McKee, MD, Principal Investigator
 - Claudia Lechuga, MS, Project Leader

+ VA OPCCT sites

2 sites DC, GLA

BraveNet Centers





Completed Research Projects

- BraveNet Multi-Center Integrative Medicine Survey (Registry Study)
 - 4,180 subjects, one visit (Explore, 2012 and 2015)
- BraveNet Multi-Center Study on Integrative Medicine Treatment Approaches for Pain (SIMTAP)
 - 400 subject target, four visits with 24 weeks follow-up, and includes laboratory testing
 - 252 participants completed four study visits and contributed to final analysis (BMC CAM, 2013 and Integrative Cancer Therapies, 2014)

BraveNet Publications

Abrams et al. *BMC Complementary and Alternative Medicine* 2013, 13:146
<http://www.biomedcentral.com/1472-6882/13/146>



RESEARCH ARTICLE

Open Access

The BraveNet prospective observational study on integrative medicine treatment approaches for pain

Donald I. Abrams^{1*}, Rowena Dolor², Rhonda Roberts², Constance Pechura³, Jeffery Dusek⁴, Sandi Amoils⁵, Steven Amoils⁵, Kevin Barrows¹, Joel S. Edman⁶, Joyce Frye⁷, Erminia Guarneri⁸, Ben Kligler⁹, Daniel Monti⁶, Myles Spar¹⁰ and Ruth Q. Wolever¹¹

ORIGINAL RESEARCH

INTEGRATIVE MEDICINE PATIENTS HAVE HIGH STRESS, PAIN, AND PSYCHOLOGICAL SYMPTOMS

Ruth Q. Wolever, PhD^{1*}, Nikita S. Goel, MS², Rhonda S. Roberts, MSPH³, Karen Caldwell, PhD⁴, Benjamin Kligler, MD⁵, Jeffery A. Dusek, PhD⁶, Adam Perlman, MD⁷, Rowena Dolor, MD⁸ and Donald I. Abrams, MD⁹

Brief Report

Characteristics of Cancer Patients Presenting to an Integrative Medicine Practice-Based Research Network

Joel S. Edman, DSc¹, Rhonda S. Roberts, MS², Jeffery A. Dusek, PhD³, Rowena Dolor, MD², Ruth Q. Wolever, PhD², and Donald I. Abrams, MD⁴

Integrative Cancer Therapies
1–6
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sagepub.com/journalsPermissions.nav
DOI: 10.1177/1534735414537876
ict.sagepub.com

ORIGINAL RESEARCH

PATIENTS SEEK INTEGRATIVE MEDICINE FOR PREVENTIVE APPROACH TO OPTIMIZE HEALTH

Ruth Q. Wolever, PhD^{1,*}, Donald I. Abrams, MD², Benjamin Kligler, MD³, Jeffery A. Dusek, PhD⁴, Rhonda Roberts, MSPH⁵, Joyce Frye, DO, MBA, MSCE⁶, Joel S. Edman, DSc⁷, Steve Amoils, MD⁸, Elizabeth Pradhan, PhD⁶, Myles Spar, MD, MPH^{9,10}, Tracy Gaudet, MD¹, Erminia Guarneri, MD¹¹, Peter Homel, PhD³, Sandra Amoils, MD⁸, Roberta A. Lee, MD³, Brian Berman, MD⁶, Daniel A. Monti, MD⁷ and Rowena Dolor, MD, MHS⁵



BraveNet Access to Patients In Current Network Sites

- Over 300,000 patient visits in 2013-2015
- More than 45,000 unique patients
- Over 300 Health Care Providers at the nineteen IM clinical sites
- Interest in expanding to additional sites for future studies

PRIMIER

- **P**atients
- **R**eceiving
- **I**ntegrative
- **M**edicine
- **I**nterventions
- **E**ffectiveness
 - **R**egistry

NCT01754038



PRIMIER Objectives

- PRIMARY OBJECTIVE
 - To evaluate the change in patient-reported outcomes (e.g. quality of life, mood and stress) over time
- SECONDARY OBJECTIVES
 - To evaluate whether patient- reported outcomes differ by baseline characteristics of the participants (e.g. demographics, clinical condition, patient activation measure score or intervention sought)
 - Identify best practices of Integrative Health and Medicine to improve the health of the US.



PRIMIER Inclusion Criteria

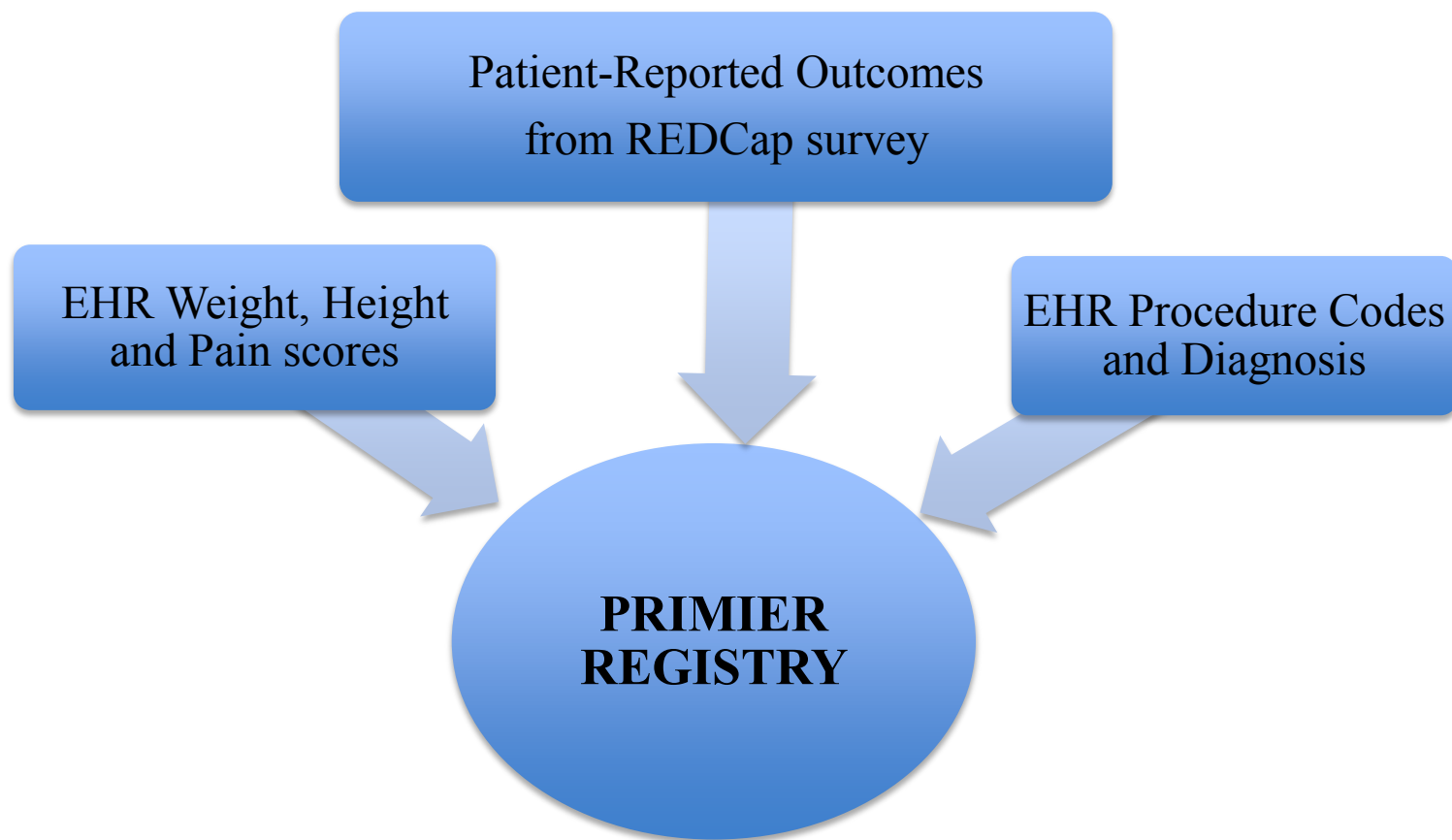
- Be seen as a clinical patient in one of the participating BraveNet clinics and willing to participate in the Registry
- Be 18 years of age or older
- Have access to a computer with internet connection and a valid email address
- Be willing to be contacted in the future by study investigators



PRIMIER Data Collection

- REDCap is used to collect all patient-reported data
- Baseline, 2, 4 6, 12, 18 & 24 months
- Patient Demographics
 - Alcohol, Tobacco etc
 - Utilization of IM interventions per NHIS
- PROMIS[®] 29
- Perceived Stress Scale (PSS-4)
- Patient Activation Measure © (PAM)

PRIMIER Registry

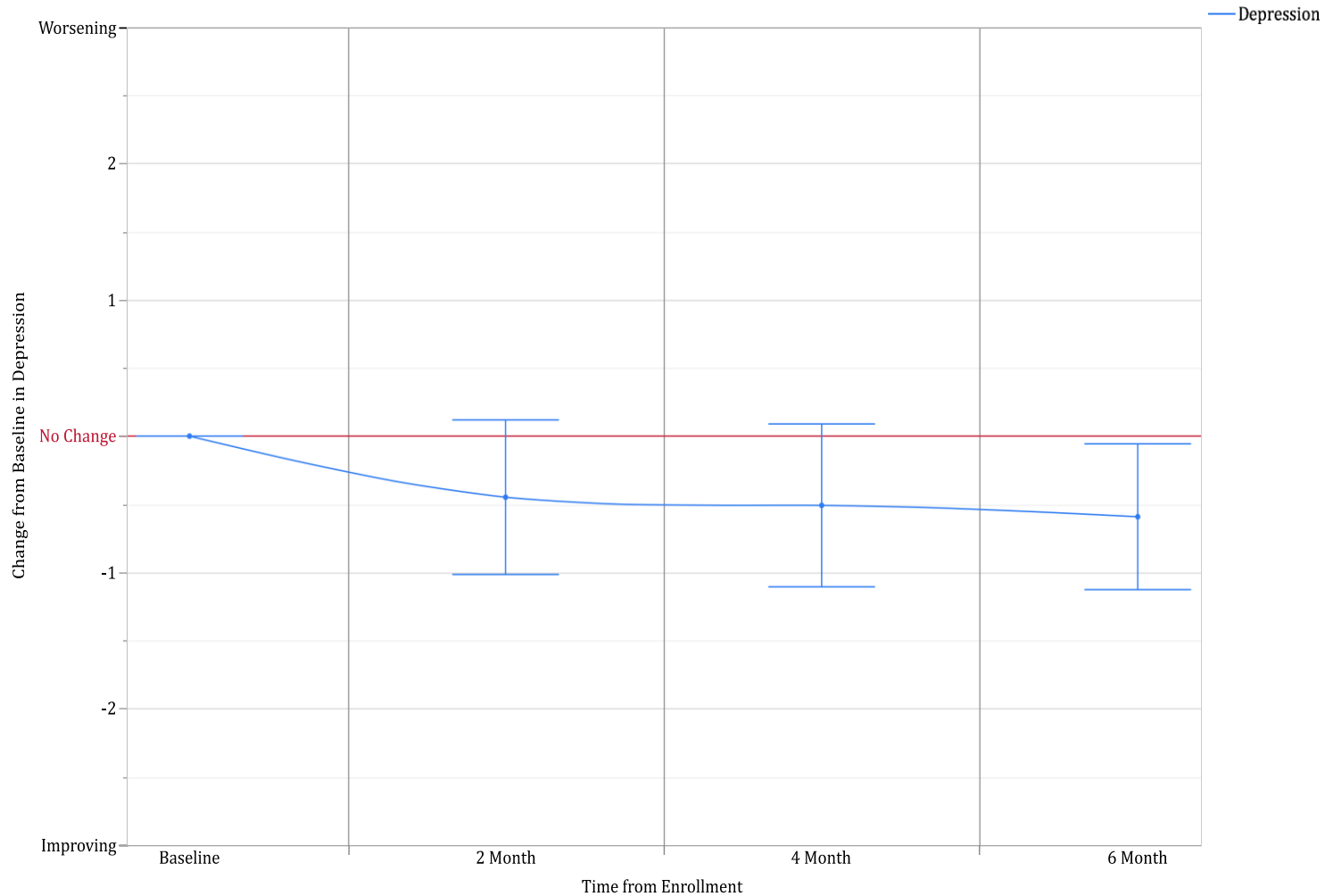




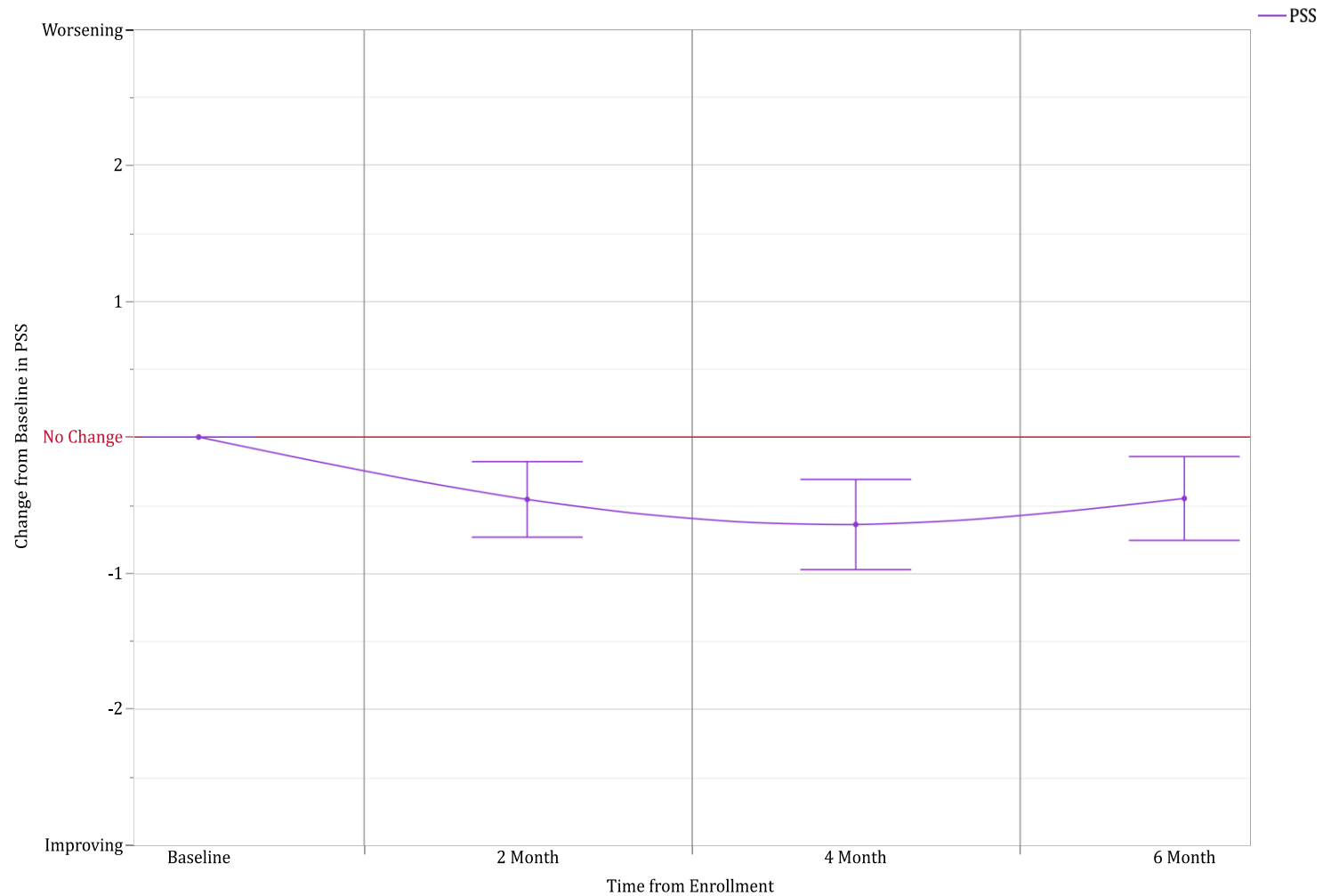
Baseline Demographics (n=1684)

- Female 77.4%
- Race: White 84%, AA 6%, Hispanic 6%
- College or Beyond: 81%
- Married: 56% Partnered: 10%
- Divorced: 11% Never Married: 18% Widowed: 2%
- Employed: 68% Retired: 14%
- Annual Income >\$100,000- 49% <\$20,000- 8%

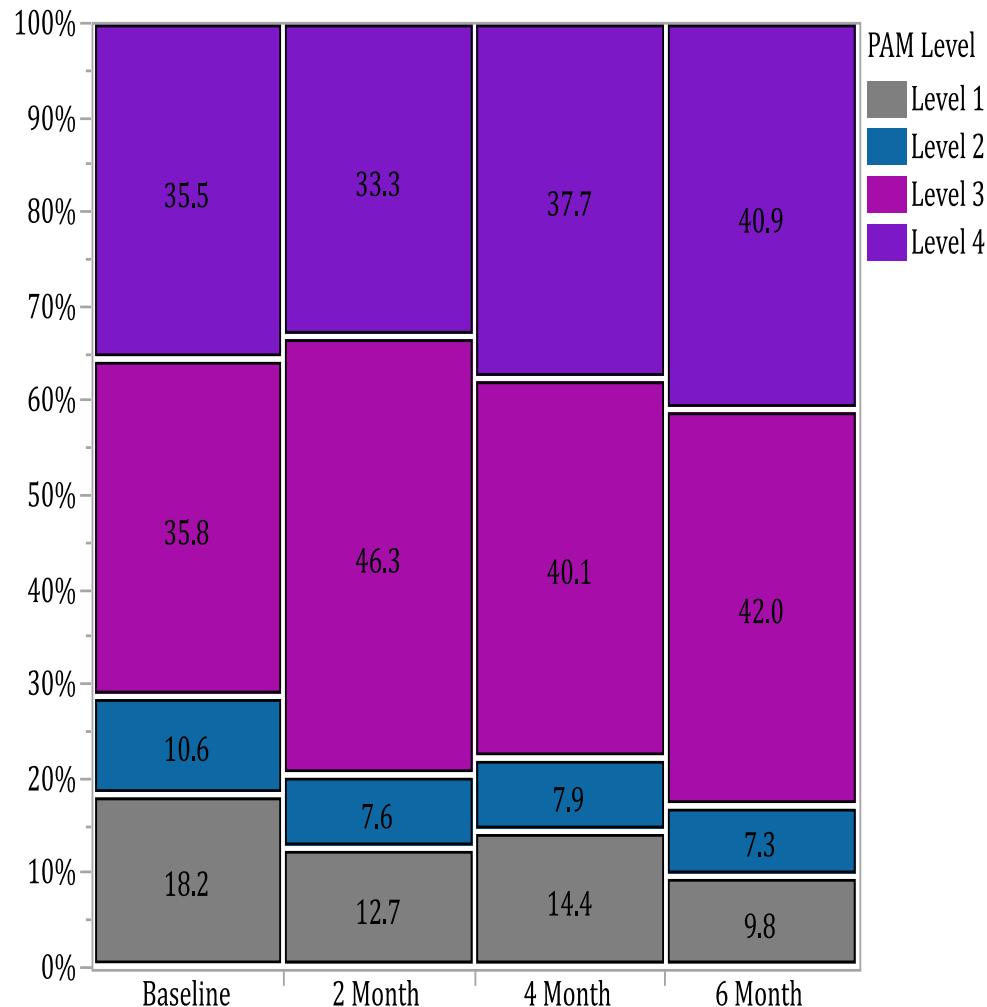
Depressive Symptomology



Perceived Stress



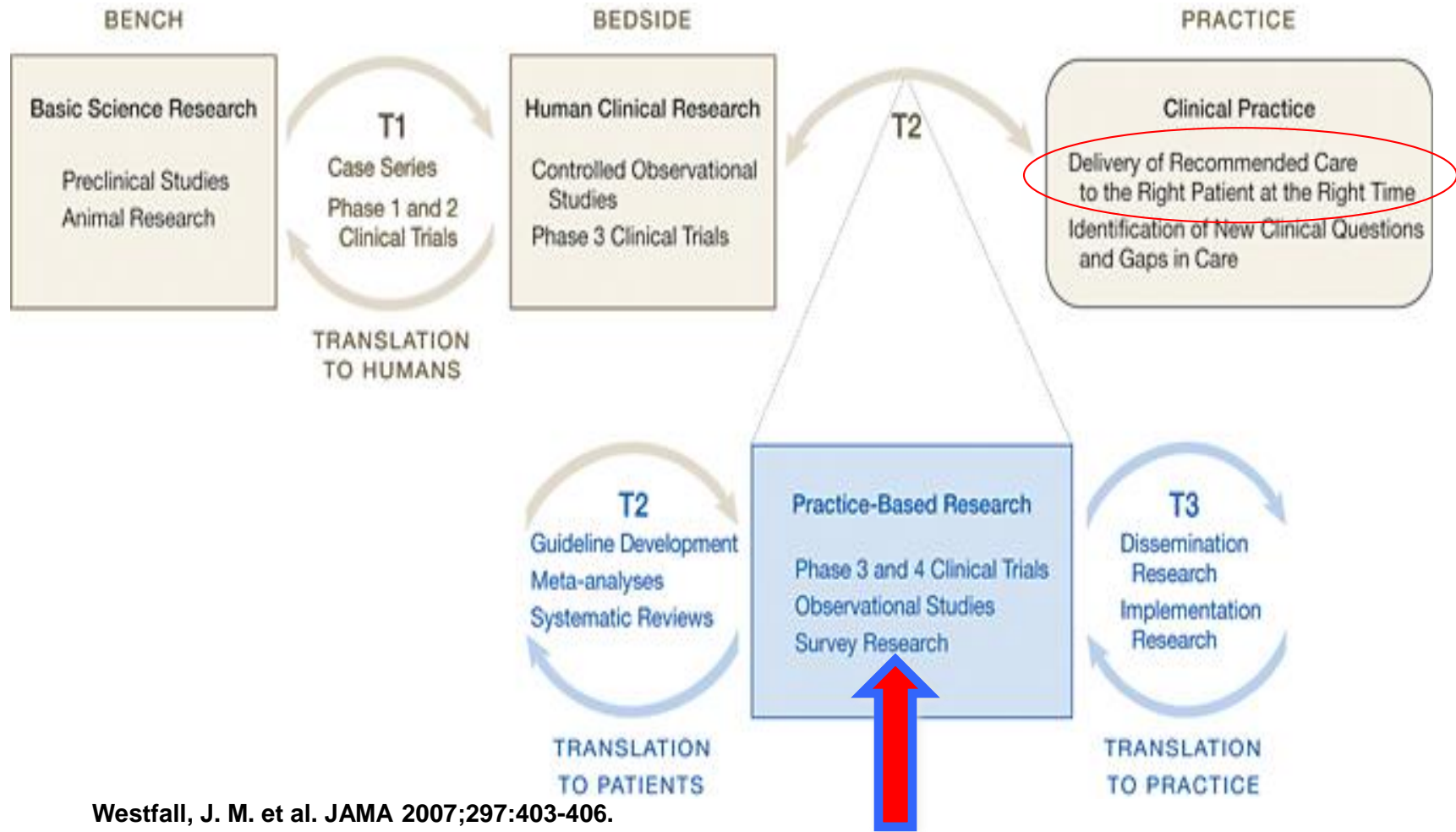
Patient Activation Measure



- Level 1- Does not believe has active or important role (↓46%)
- Level 2- Lacks knowledge and confidence to act (↓31%)
- Level 3- Beginning to take action (↑17%)
- Level 4- Maintaining behavior over time (↑17%)

Time from Enrollment

Practice-based Research



Westfall, J. M. et al. JAMA 2007;297:403-406.



Summary: Practice-Based Research

- PBR studies provide invaluable information for the field of complementary and integrative health
 - Both operations and research.
- Answers derived from these studies can be used in various ways
 - Future randomized trials
 - Clinical practice (operations)
 - Additional observational studies