Implementation of SBI in the US Department of Veterans Affairs (VA) Health Care System:

Lessons Learned

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“Implementation research is a team sport”

Dan Kivlahan

Co-investigators

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- Carol Achtmeyer, ARNP
- Emily Williams, PhD
- Gwen Lapham, MPH, MSW
- Eric Hawkins, PhD
- Laura Chavez, MPH
- Anna Rubinsky, MS

Thanks to…

- VA Office of Quality and Performance
- VA Office of Mental Health Services
- Local, regional, and national leaders:
  - Quality improvement
  - Informatics and
  - Primary care
- VA clinicians
- VA patients

Overview

- Implementation of SBI in VA
  1. What worked?
  2. What didn't work so well?
  3. Reasons for optimism
- Lessons learned and next steps
- Discussion

I. What Worked …?

Overview

I. What worked?
- Background: early research
- VA health care system
- Implementation research
  - Alcohol screening
  - Brief interventions (BI)
- Lessons learned - Greenhalgh Model

Background: Early Research

- Proposed study of AUDIT in VA clinic
- Not allowed – “too long”
- Invited to develop a brief screen
- 7 day drinking diary failed
- AUDIT-C looked promising

(Bush Arch Intern Med 1998)

Background: Early Research

For Identifying Alcohol Misuse in Men

AUDIT AUDIT-C

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Background: Early Research

For Identifying Alcohol Misuse in Men

AUDIT AUDIT-C

(

Background: Early Research

For Identifying Alcohol Misuse in Men

AUDIT AUDIT-C

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Background: Early Research

- 6 site group randomized quality improvement trial
- Alcohol misuse one of 6 conditions
- Mailed patient assessments
- Paper provider prompts: AUDIT, CAGE, symptoms, readiness, treatment
  - 15 minutes alcohol education
- No effect at 12 month follow-up

(Fihn, Am J Med, 2004)

Background: Early Research

Audiotape Study

- Intervention patients: more alcohol-related discussions (88 vs 47%; p 0.005)
- High quality smoking cessation counseling
- Alcohol-related discussions uncomfortable; missed opportunities

(Bradley, JGIM 2002)

Early Research

Patient

“I freaked out and tried to self-medicate with alcohol . . . they got me [to the hospital] . . . and sobered me up . . . I drank enough to . . . raise my blood sugar way up there . . .”

(McCormick, JGIM 2006)

Early Research

Provider

"Well, how have your—
have—have you been checking your sugars
at all in the last few days?"

No further discussion

of patient's drinking during this visit

(McCormick, JGIM 2006)

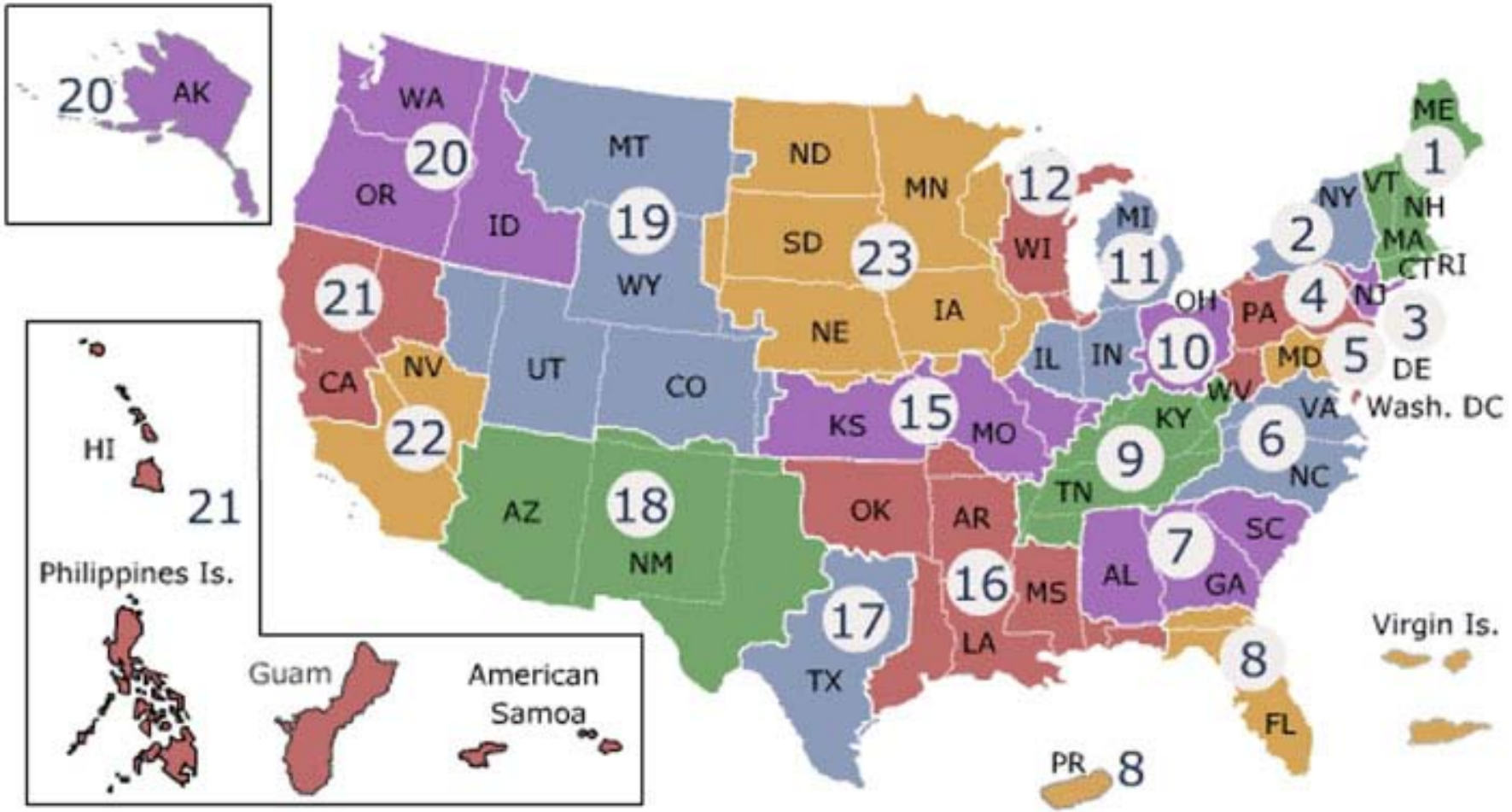
Lessons Learned

- AUDIT may be too long
- Screening and prompts got BI on busy clinical agenda at one site
- Providers appeared to need education regarding evidence-based BI
- Smoking counseling suggested
  - Providers could learn BI
  - Brief alcohol advice feasible

Implementation Research

The VA Health Care System…

VA Health Care System



VA Health Care System

- Electronic medical record (EMR)
  - Nationwide
  - “Clinical reminders”
    - Locally developed/implemented
    - Use varies across sites
    - Allow real-time monitoring
    - Shared across sites

VA Health Care System

Office of Quality & Performance (OQP)

- Monitors performance with
  - Manual record reviews, patient surveys, electronic data
- “Performance Measures”
  - Linked to $$ bonuses
  - Quarterly feedback

VA Health Care System

Office of Quality & Performance (OQP)

- National mandate for preventive care
  - Alcohol screening required
    - Any validated questionnaire
    - Most sites chose CAGE
      - screen for alcohol use disorders
  - High rates alcohol screening (~96%)

Screening for the Spectrum of Alcohol Misuse

Local Pilot Test of the AUDIT-C

- CAGE had been implemented -1996
  > 50% screen-positives didn't drink
- Local leader asked for recommendation
- Local implementation of AUDIT-C - 1999

(Bradley, J Stud Alcohol, 2001)

Integration of AUDIT-C into EMR

- Informal network: shared AUDIT-C with mental health informatics leader
- AUDIT-C incorporated into VA's EMR
- Automatically calculated score (0-12)

National AUDIT-C Implementation

2002

- VA Office of Quality & Performance (OQP)
- Asked: “What follow-up should be required?”
- 83% of VA patients drinking • • •• • • • said they weren’t getting the help they needed for their drinking

(Kazis, OQP Report on Alcohol, 2002)
(Bradley, Am J Manag Care 2006)

National AUDIT-C Implementation

2003 - Educated OQP

- Evidence for efficacy of brief intervention
- Limitations of the CAGE – only AUD
- AUDIT-C implemented locally

(Bradley, Am J Manag Care 2006)

National AUDIT-C Implementation

2003

Invited to give 2 national video conferences

- Screening for spectrum of alcohol misuse
- Brief interventions (BI)

(Bradley, Am J Manag Care 2006)

Response to Presentations

National AUDIT-C Implementation

New Screening Performance Measure (PM)

- OQP wanted to move ahead
- Stepped approach
- Invitation: Performance Measures Work Group
- Recommended: AUDIT or AUDIT-C

(Bradley, Am J Manag Care 2006)

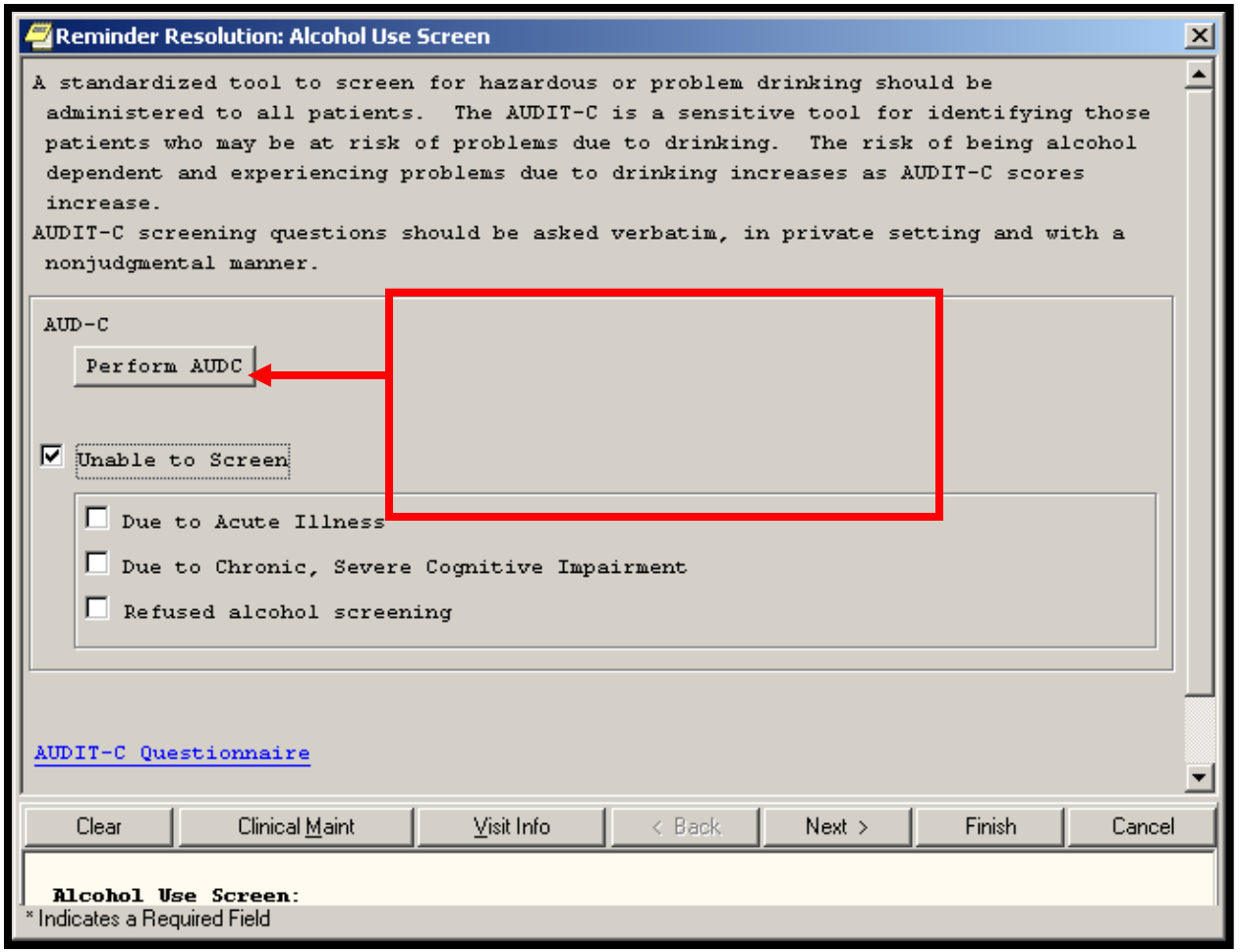
National AUDIT-C Implementation

New Screening Performance Measure (PM)

- Alcohol screening PM announced 2003
- Immediate requests for
  - EMR clinical reminder
  - Educational assistance
- “Frequently Asked Questions” document

(Bradley, Am J Manag Care 2006)

AUDIT-C Clinical Reminder



National AUDIT-C Implementation

New Performance Measure (2004)

- High rates of screening persisted
- 97% AUDIT-C
  - ~ 1.5 million screened 1st year
  - 11-36% screened positive
- AUDIT-C and question about alcohol related advice added to patient surveys

(Bradley, Am J Manag Care 2006)

Lessons Learned - Screening

1. VA infrastructure and readiness critical
2. Performance measure created demand
   - EMR tools
   - Education
3. Performance measure + EMR resulted in high rates of documented screening

(Bradley, Am J Manag Care 2006)

Lessons Learned - Screening

3. Important Facilitators
   - Local pilot test of AUDIT-C
   - Working in the system – integrated with other preventive care
   - Informal networks led to “diffusion” of the clinical reminder

(Bradley, Am J Manag Care 2006)

Brief Intervention (BI)

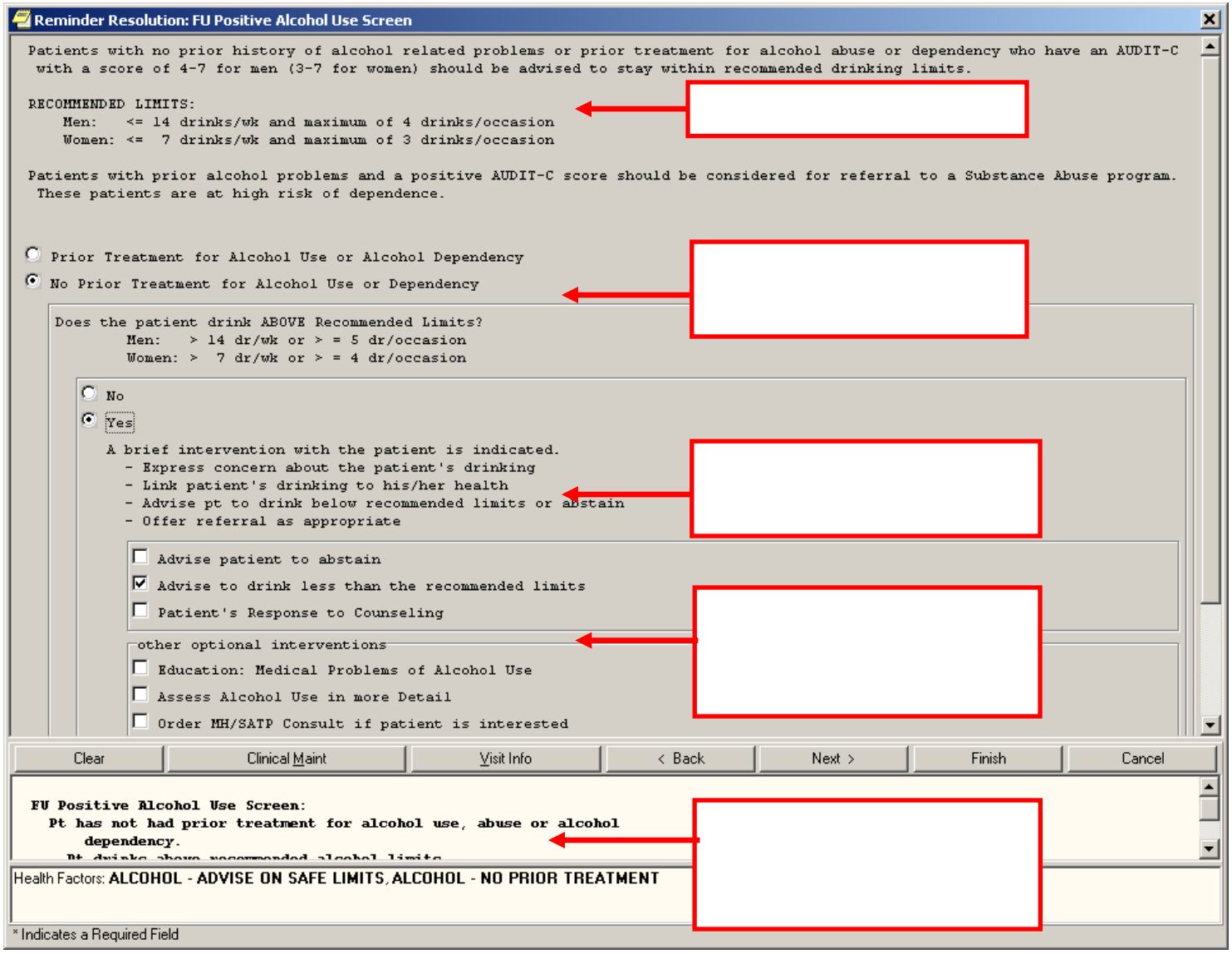
Research BI

In the Meantime …

- Development of Clinical Reminder for brief intervention (BI) triggered by a positive AUDIT-C
- Based on an analysis of how BIs were implemented in trial

(Supported by NIAAA K23 and RWJ Foundation)

Clinical Reminder for BI



Local Test of BI Clinical Reminder

BI Clinical Reminder

- Local pilot study – 2003-2006
- Clinicians rarely used clinical reminders
- One hallway in General Medicine Clinic
- Only 6% of patients who screened positive had BI documented

(Williams JSAD 2010)

(Supported by NIAAA K23 and RWJ Foundation)

Regional Implementation

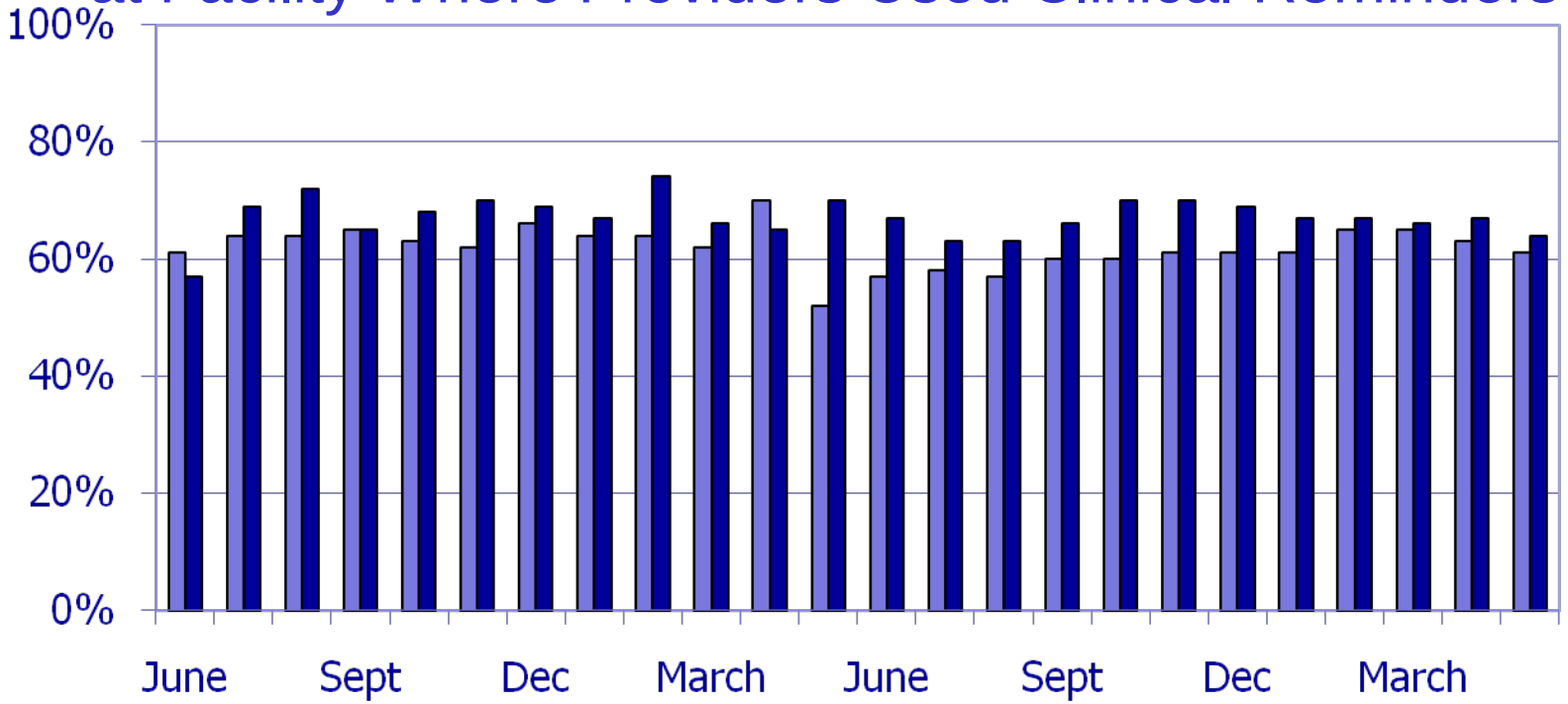
BI Clinical Reminder

- Another facility asked for reminder (2004)
  - Informal network: informatics experts
  - 8 clinics spread over > 100 miles
  - Clinicians routinely used reminders
  - Rapid uptake over 4 months: 67% counseled

(Bradley, Substance Abuse 2007)

Implementation Research - BI

Sustained Rates of BI Documented with Reminder at Facility Where Providers Used Clinical Reminders



Light blue: AUDIT-C 4-7 points;
Dark blue: AUDIT-C 8-12 points

(Bradley, Substance Abuse, 2007)

National Implementation - BI

Performance Measurement (PM) for BI - 2006

- OQP asked for a BI performance measure
- Using medical record review
- Proposed measure:
  - Advice and
  - Feedback linking alcohol use to health
- Evaluated in patients with AUDIT-C • •
  (See Amy Lee's Poster this afternoon!)

(Bradley, Substance Abuse 2007; Lapham, Med Care, 2010)

National Implementation - BI

Performance Measurement (PM) for BI - 2006

- 2006 – Medical record reviews of BI begin
- 2007 – PM for BI announced
- Asked to disseminate clinical reminder
- Hastily organized clinician interviews

(Bradley, Substance Abuse 2007; Lapham, Med Care, 2010)

One Provider's View of Reminders

National Implementation - BI

- Simplified the BI clinical reminder
- Modified to match PM
- 2008 – BI PM began
- Clinical reminder for BI disseminated

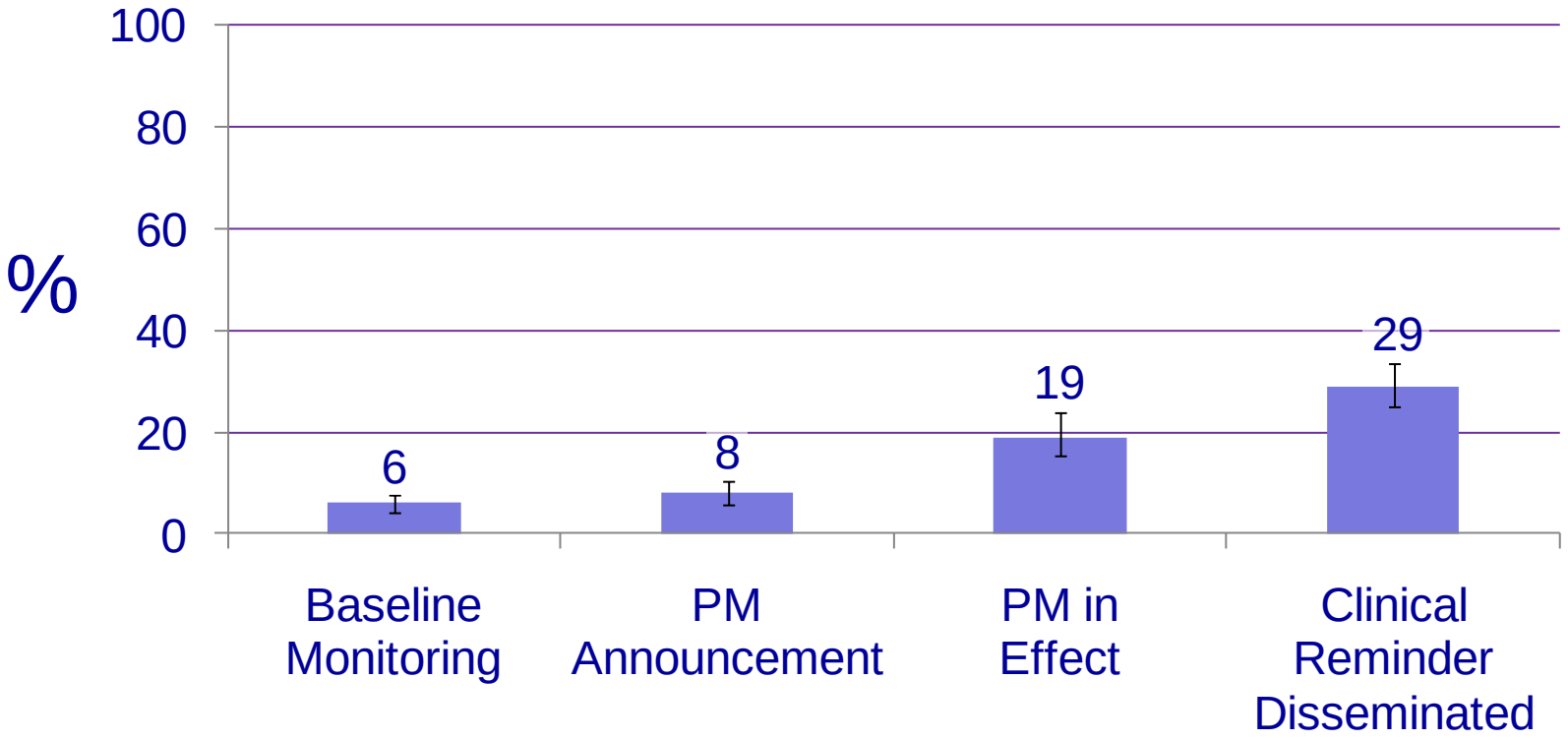
(Lapham, Med Care, 2010)

National Implementation - BI

Then we sat back, waited, and watched ….

National Implementation - BI

Documented Advice and Feedback Among Screen-positive Patients*

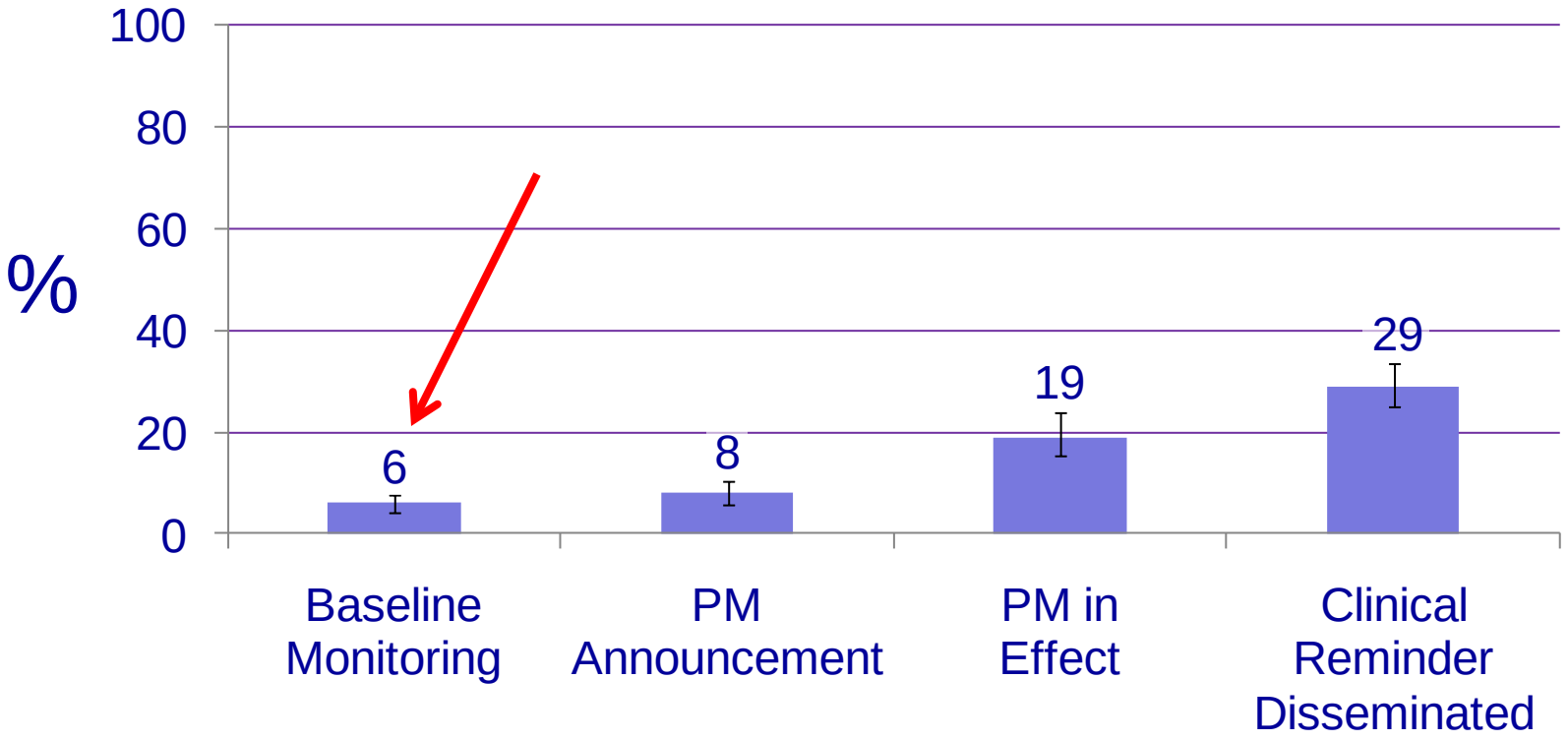


* Adjusted, among patients with AUDIT-C •

(Lapham, Medical Care 2010)

National Implementation - BI

Documented Advice and Feedback Among Screen-positive Patients*



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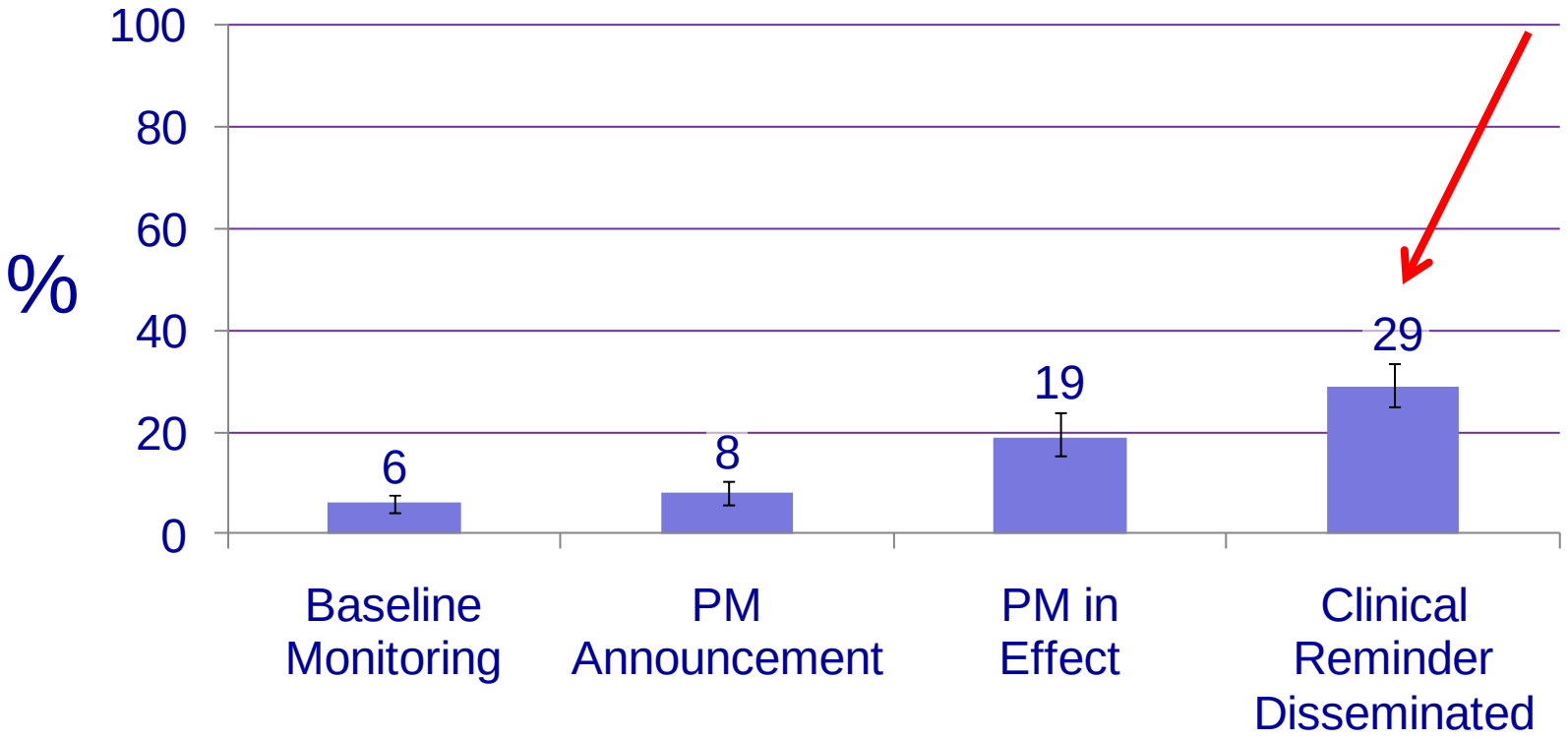
National Implementation - BI

Documented Advice and Feedback Among Screen-positive Patients*

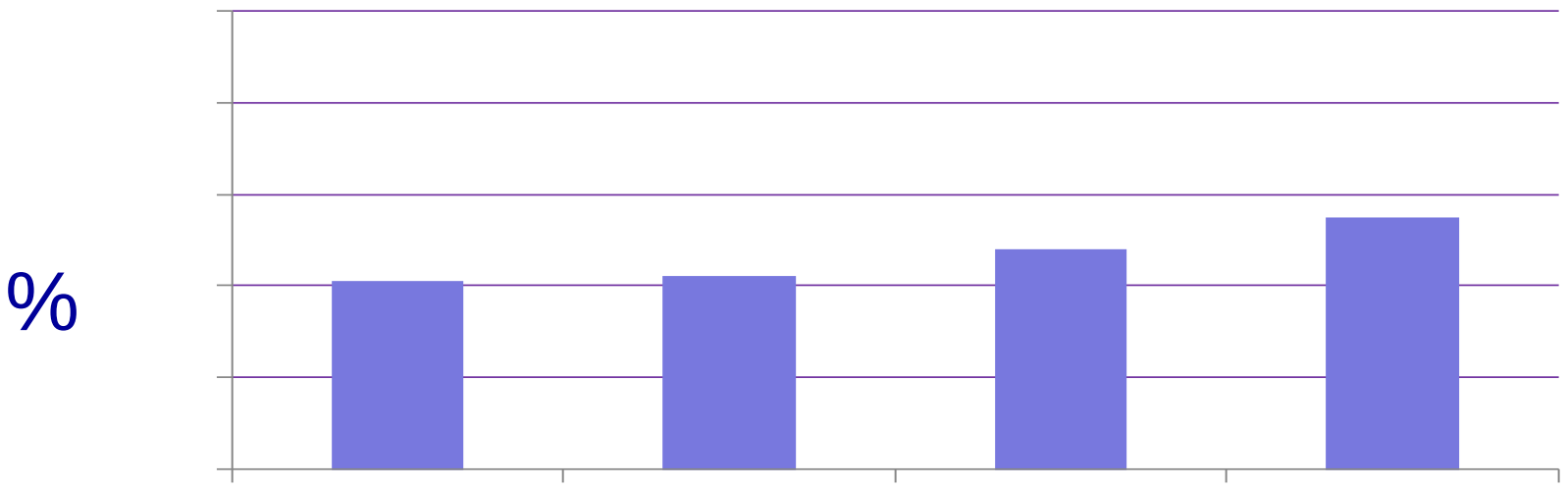


* Adjusted, among patients with AUDIT-C •

(Lapham, Medical Care 2010)

National Implementation - BI

Any Documented Advice, Feedback or Referral Among Screen-positive Patients*



* Adjusted, among patients with AUDIT-C •

(Lapham, Medical Care 2010)

National Implementation – BI

Ongoing

- 2009 – specific target
  - 62% of screen-positive patients
- 2011 – OQP website indicates high rates BI documented

Lessons Learned - BI

1. Performance measure for BI resulted in
   - Immediate demand for EMR tools and education
   - High rates of documented BI among patients with positive alcohol screens
2. Early qualitative and formative evaluation of informatics tools is essential

Lessons Learned - BI

3. Important Facilitators
   - System infrastructure and readiness
   - Working within the system
   - Informal network with: quality improvement, primary care, mental health, & informatics leaders
   - Partners who:
     - Set policy and incentives
     - Had resources for measurement

National Implementation - BI

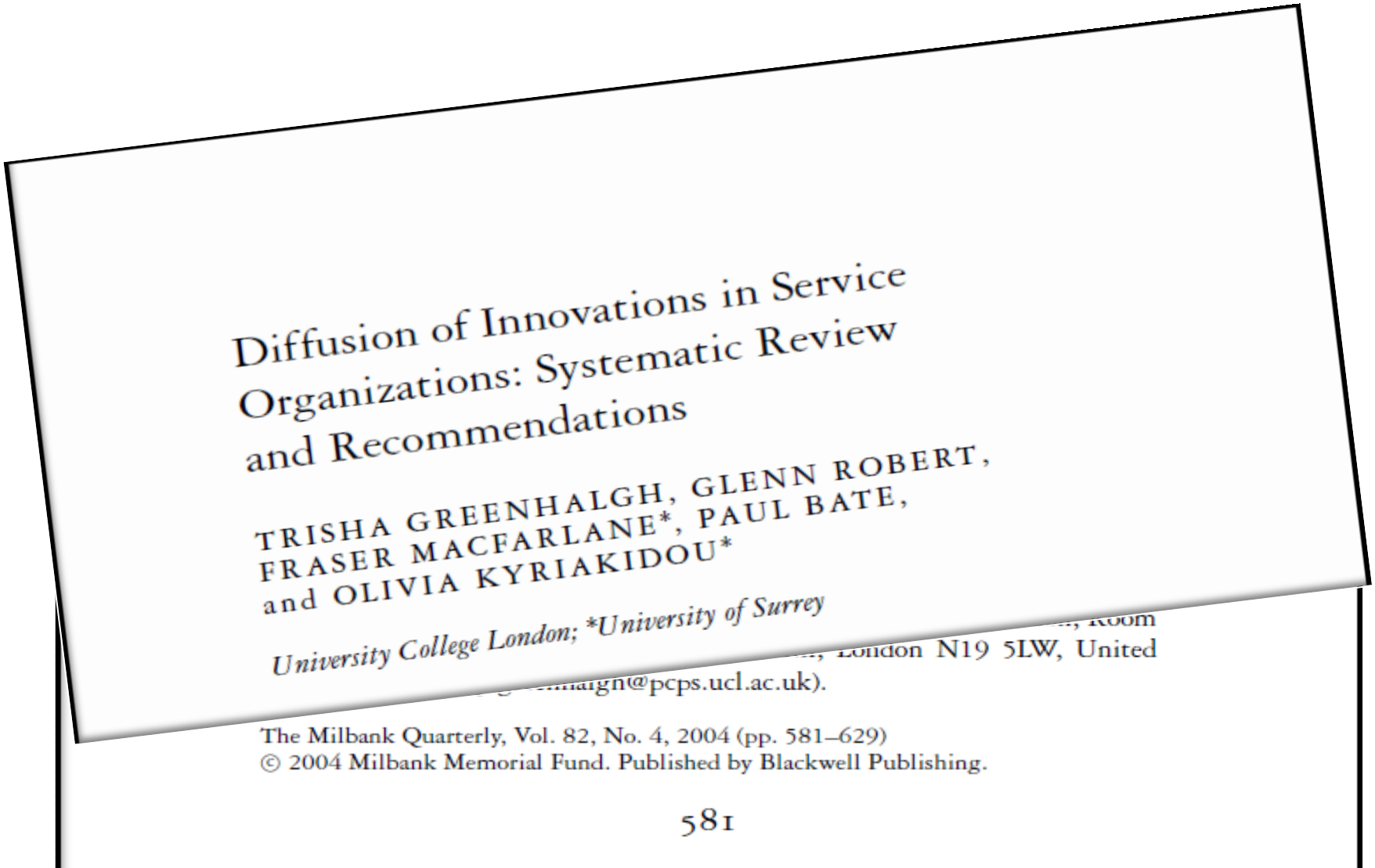
4. Barriers – Variable (or no?) Education
   - Left up to local VAs
   - Resources made available
     - Clinical reminder
     - Video and teleconference
     - PM technical manual
     - “Frequently Asked Questions”
     - Presentations national meetings
     - Online links and presentations

Lessons Learned - Screening

4. Barriers - Research Funding

- Traditional approaches too slow
- Research funding came from:
  - Career grants
  - Quality enhancement research (QuERI)
    - Core funding & “rapid response” projects
  - Other VA quality improvement $

Greenhalgh Model



Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations

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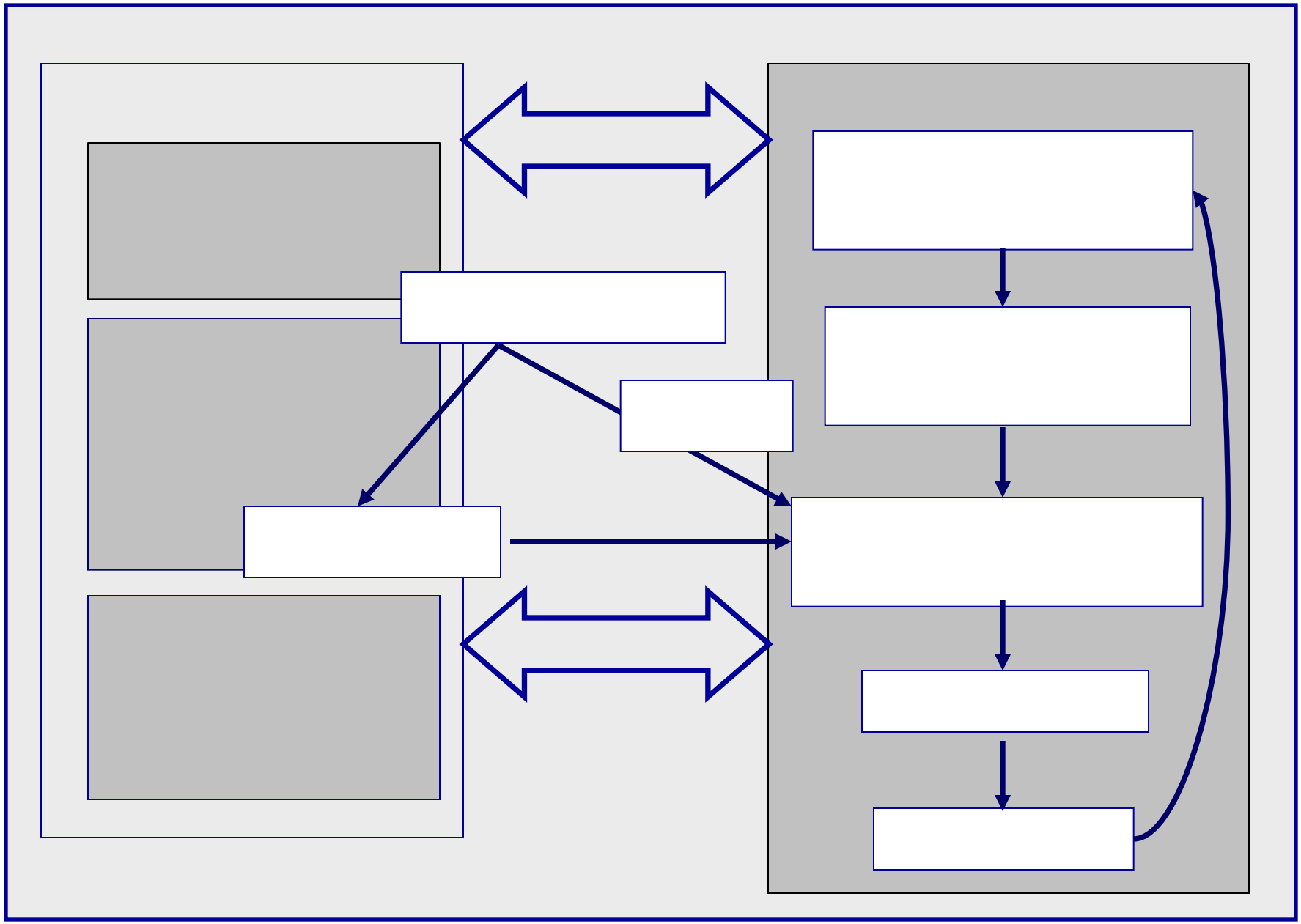
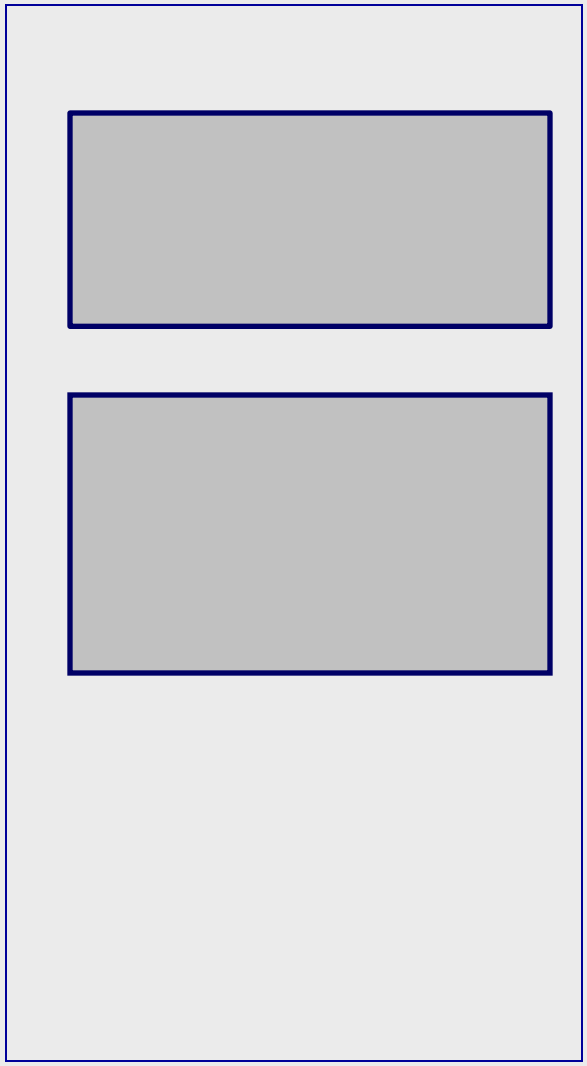
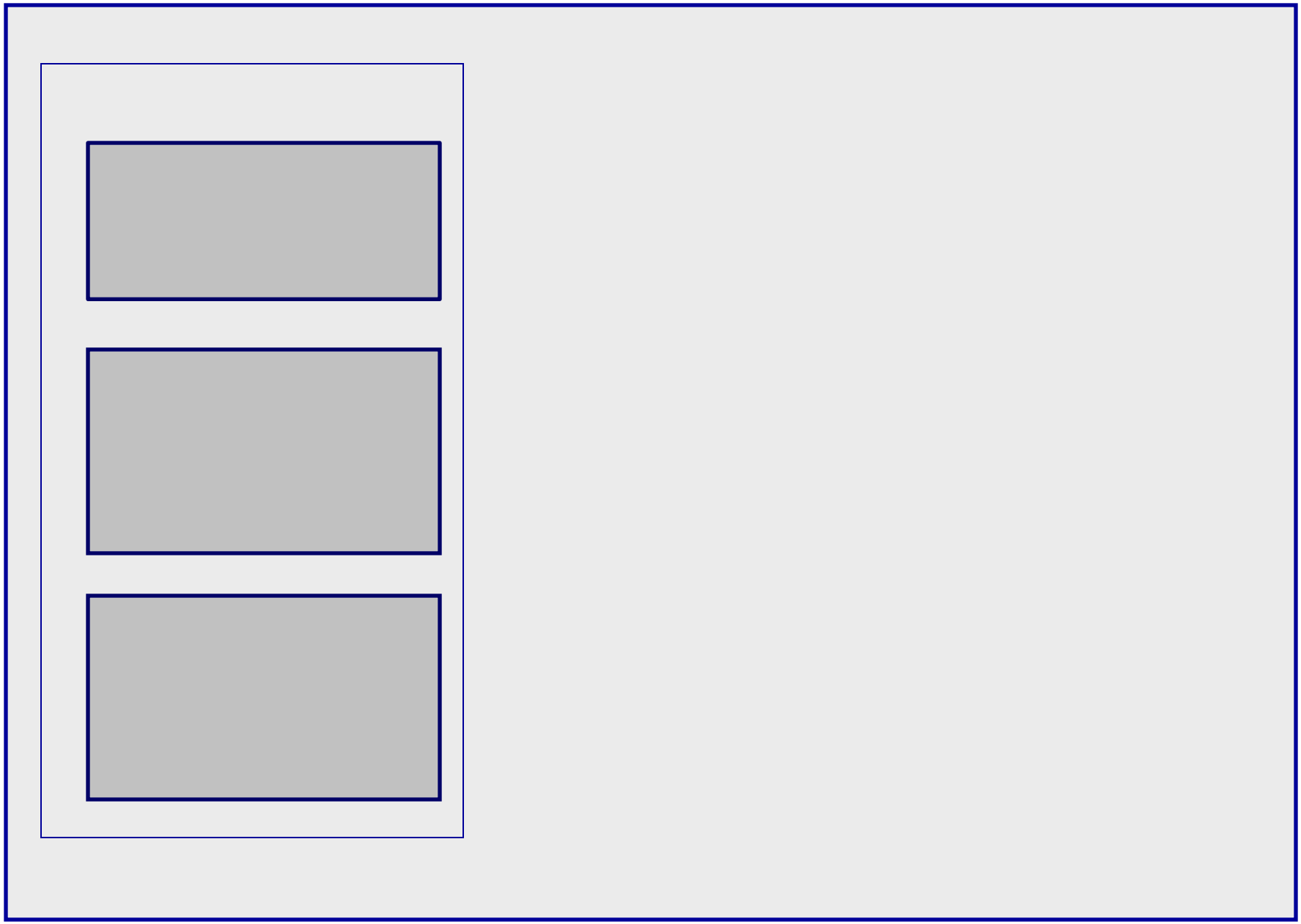
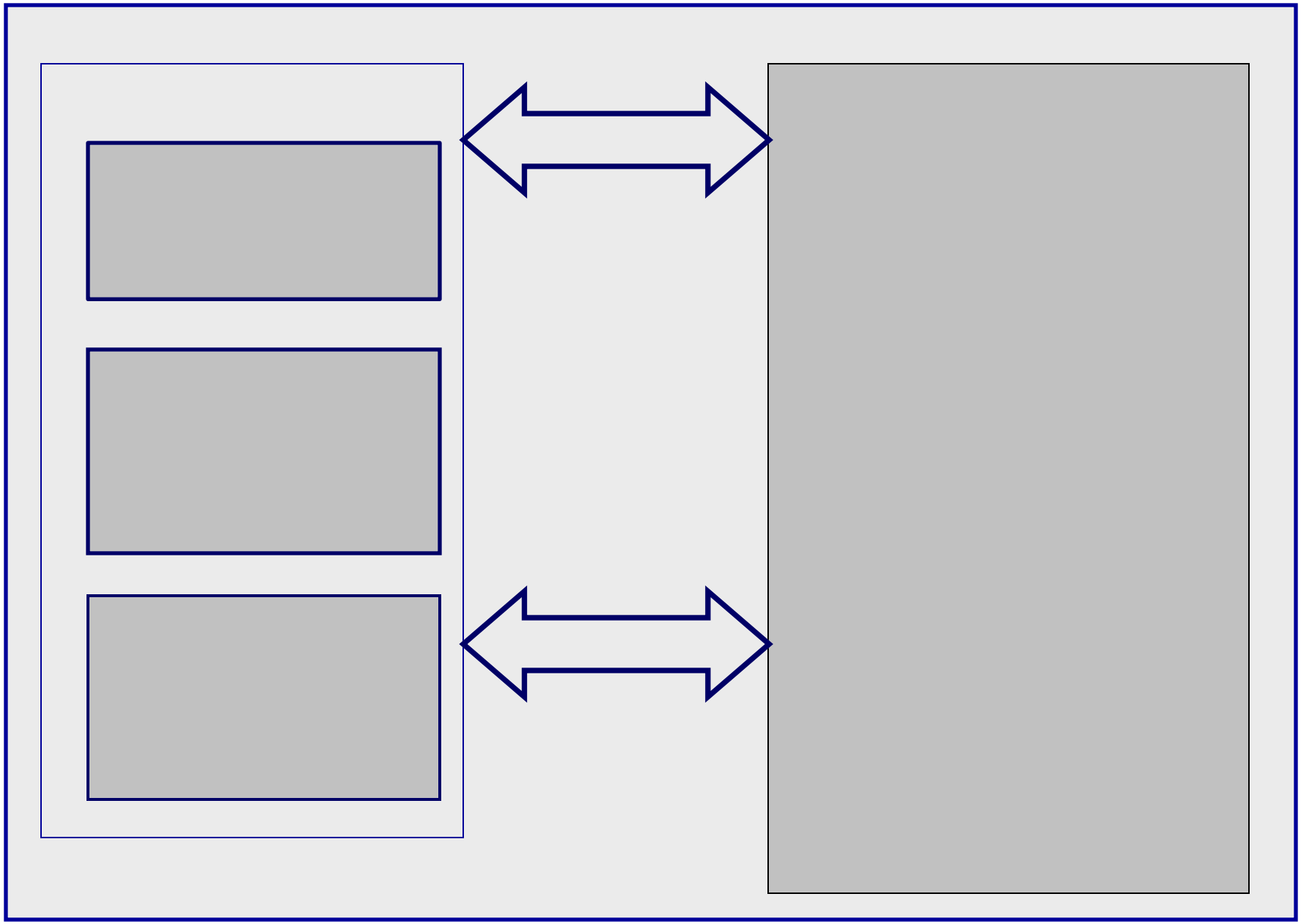
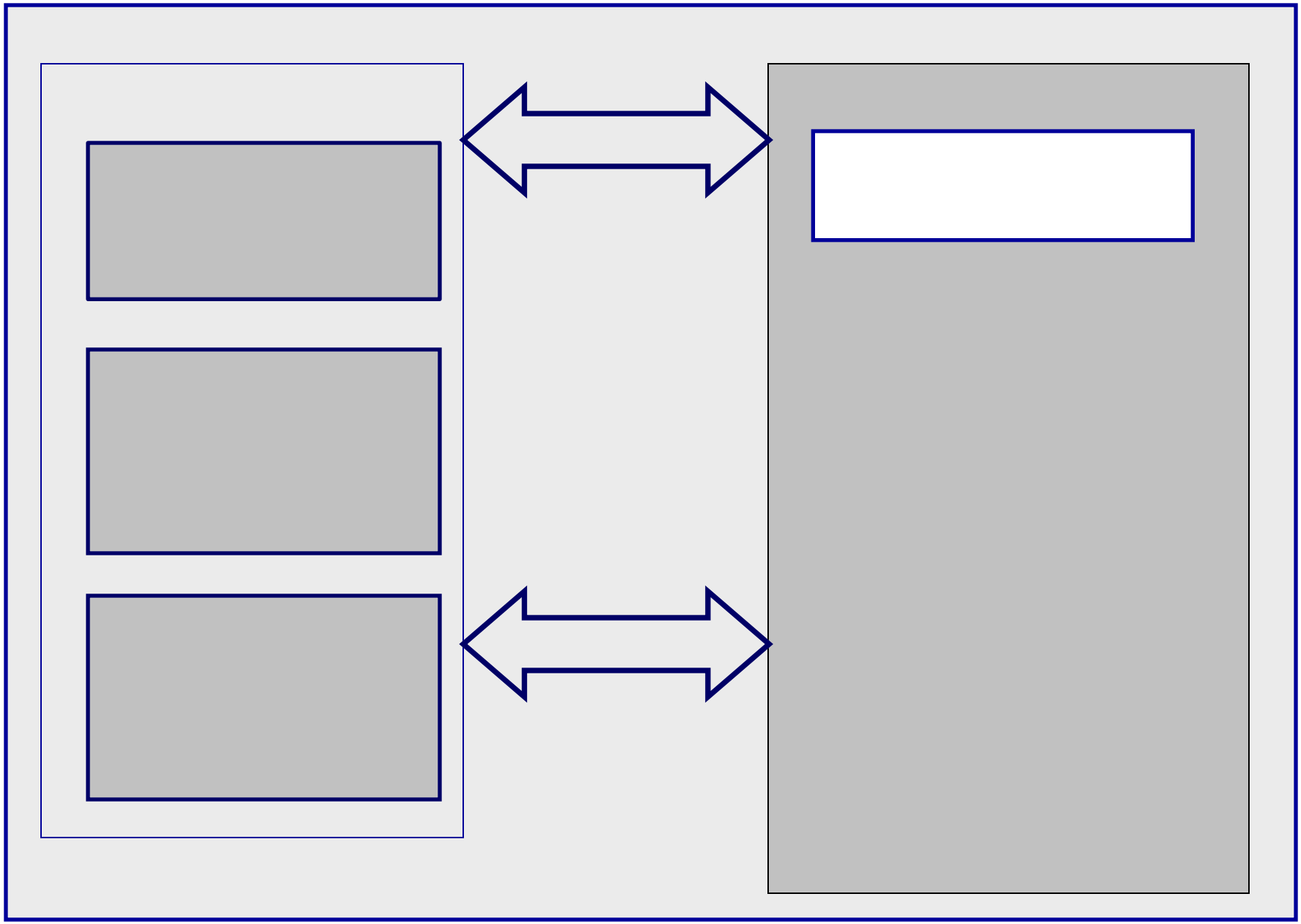
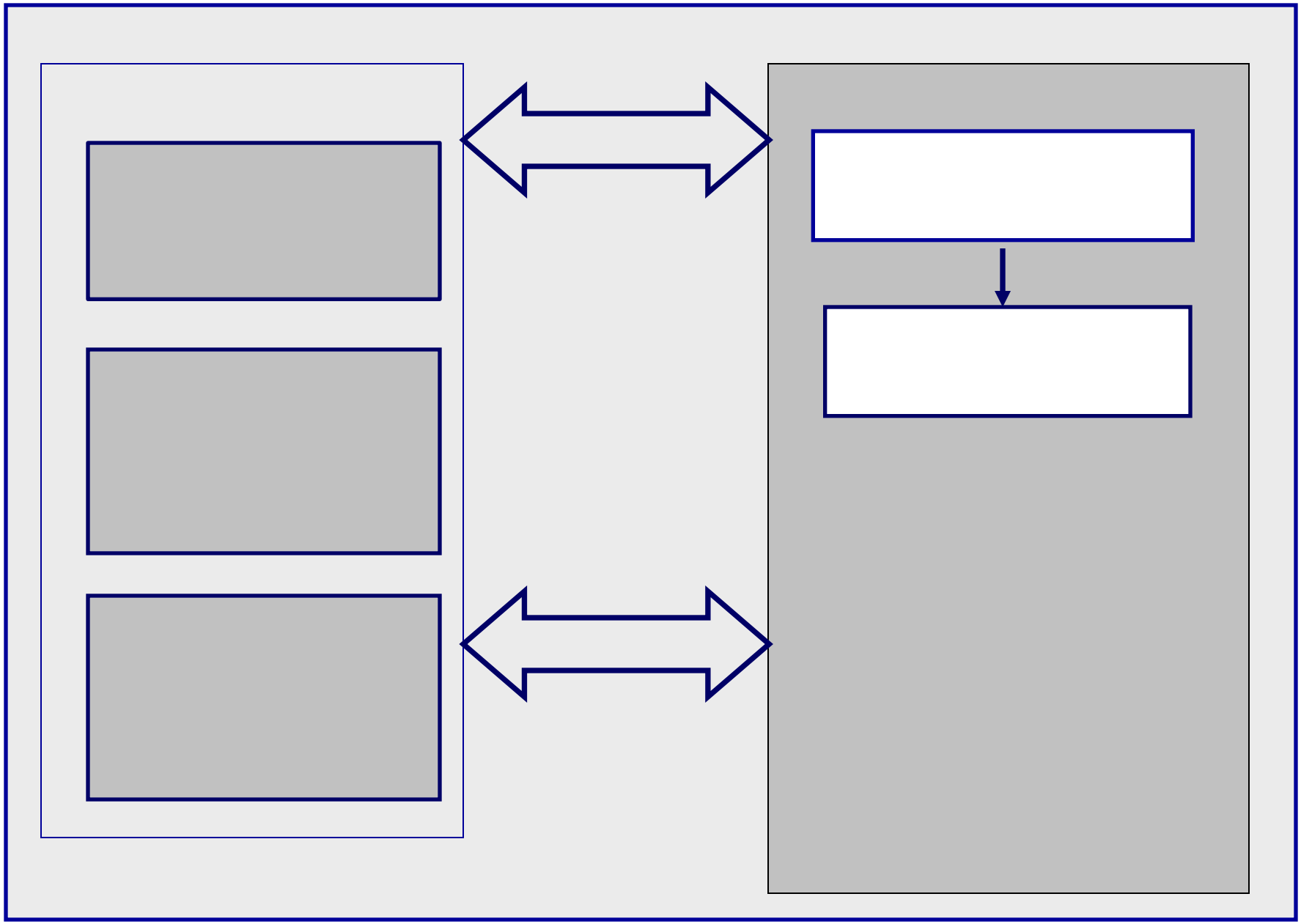


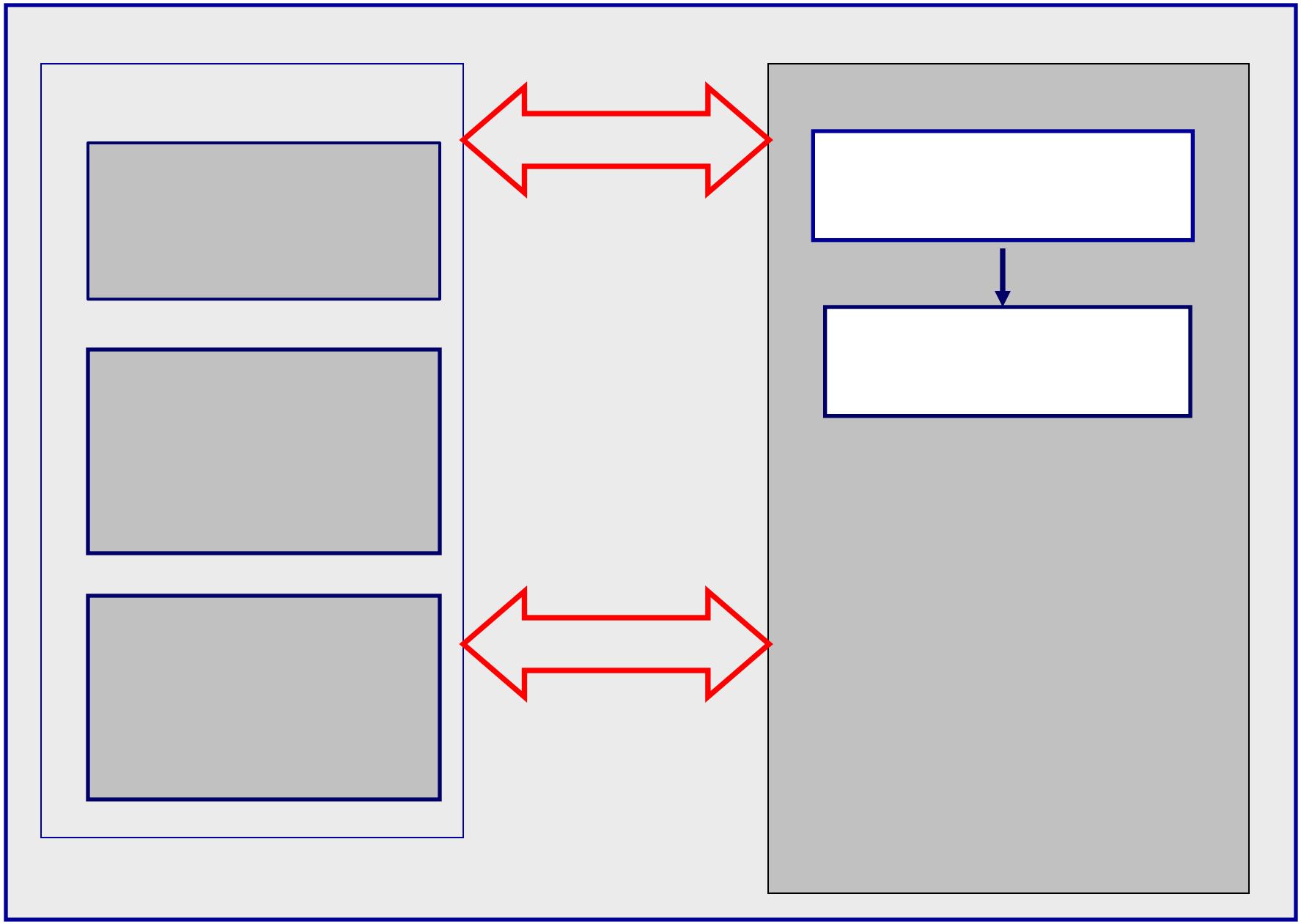


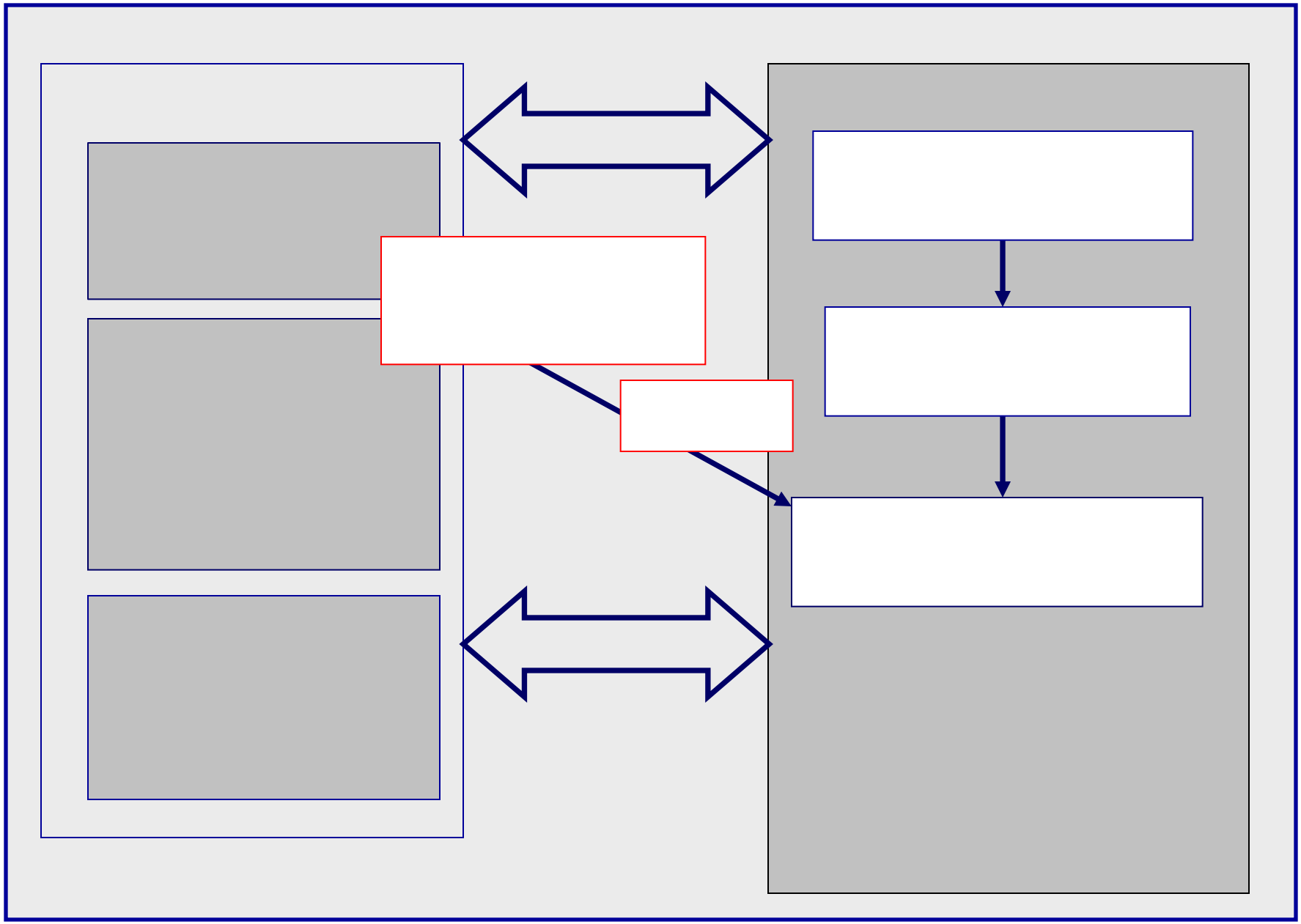


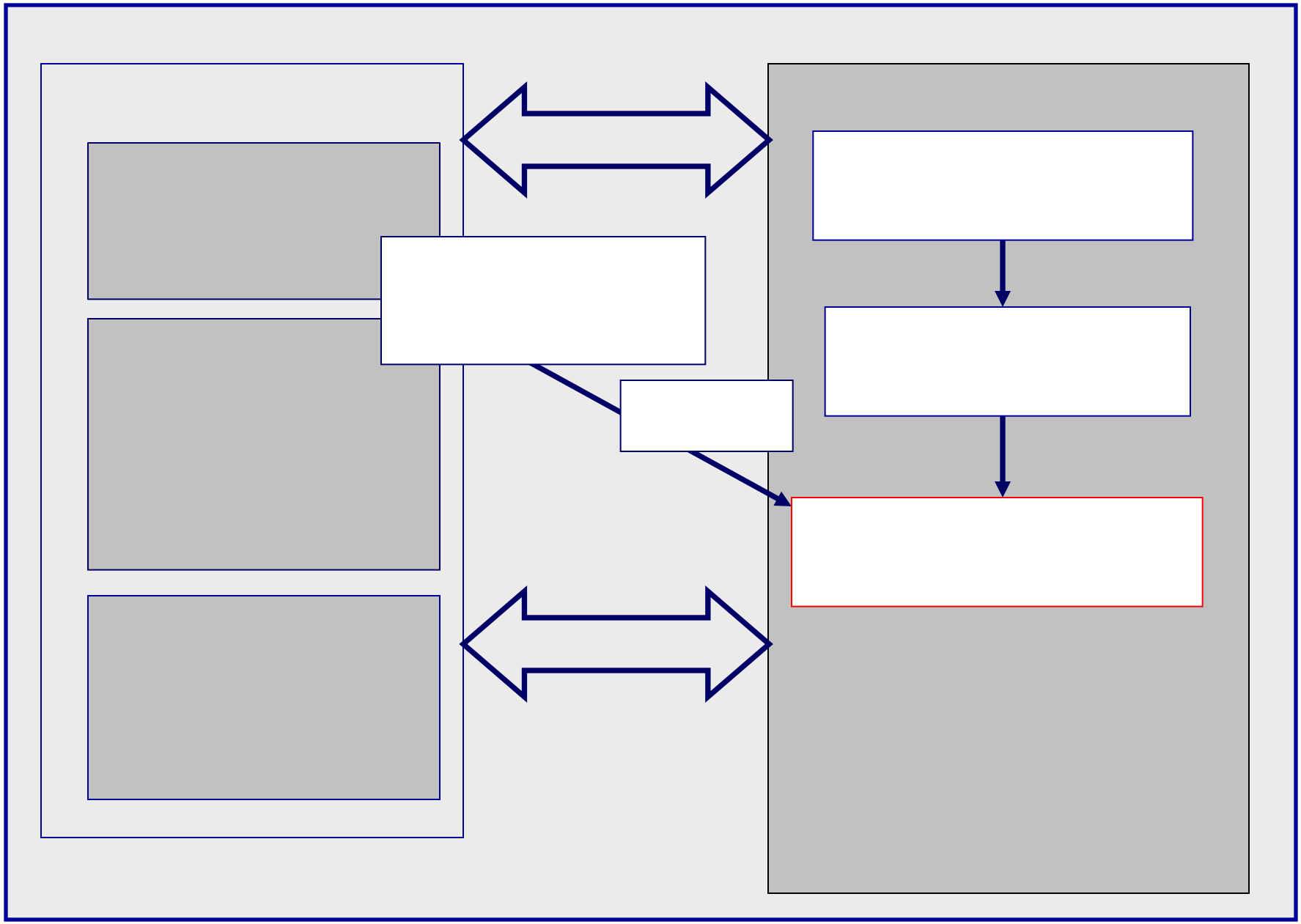


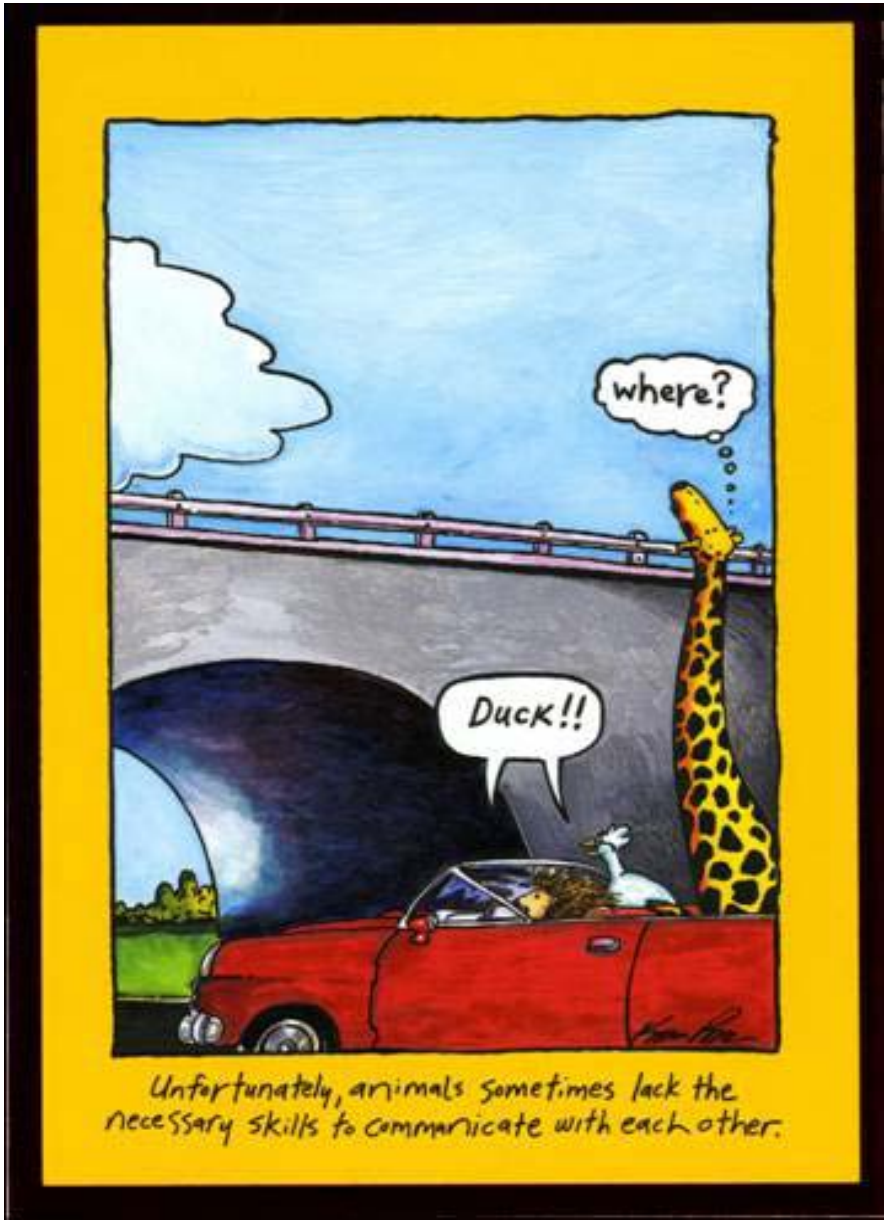








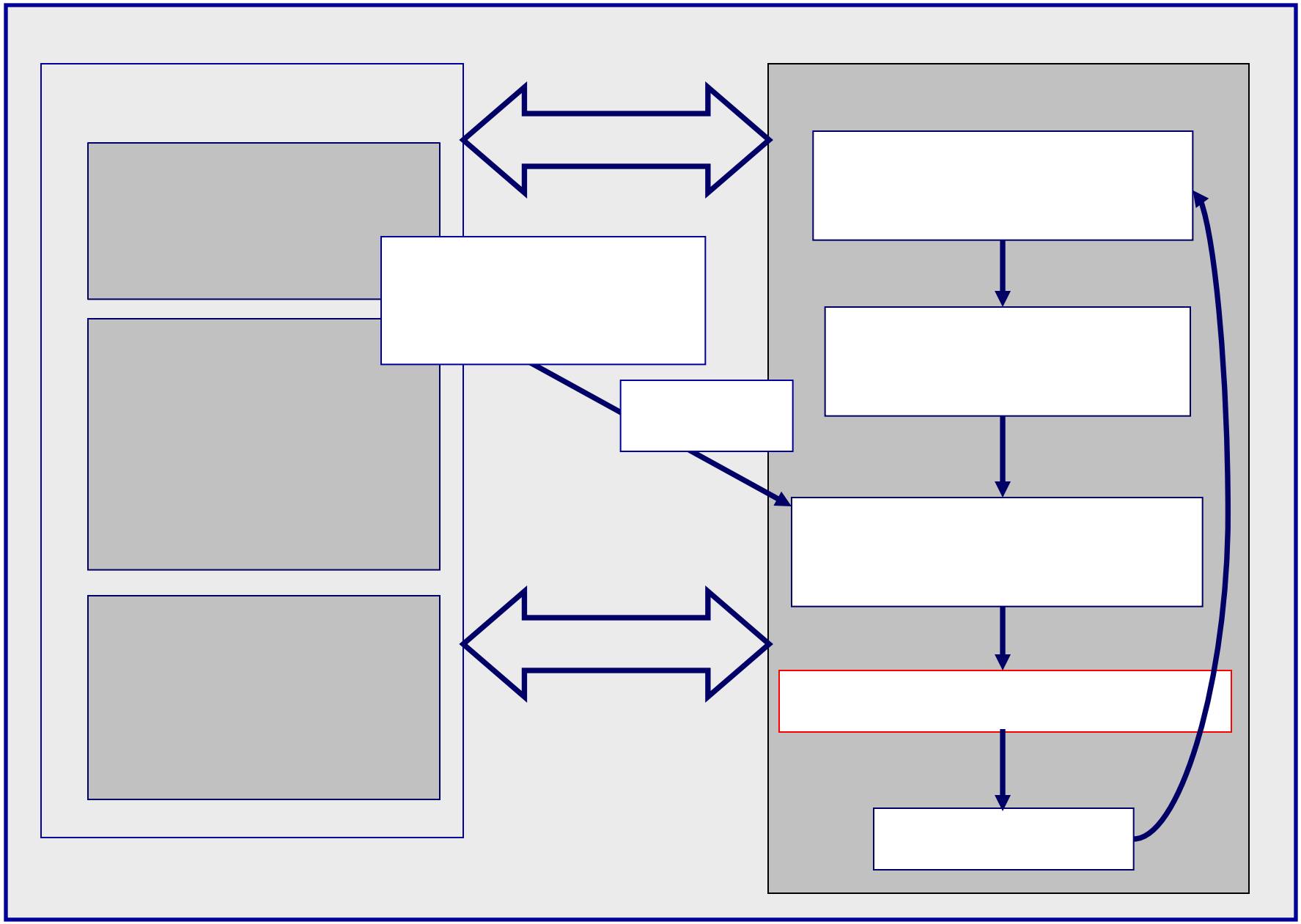


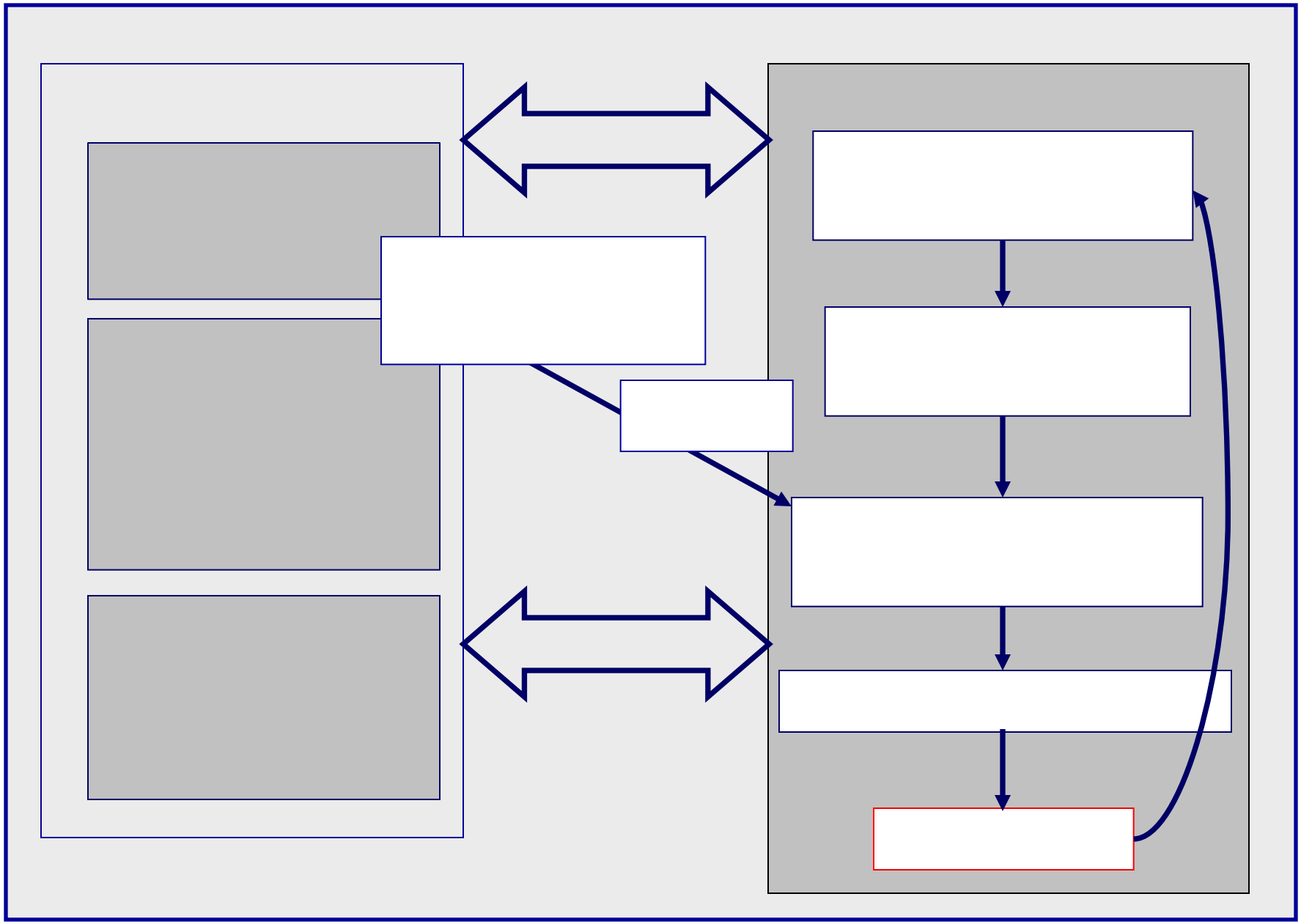


The importance of shared meaning

…

See
Emily Williams' Presentation Tomorrow!





Part II

Sometimes ….

Things Didn’t Go as We’d Like

Quality of Alcohol Screening

Quality of Screening?

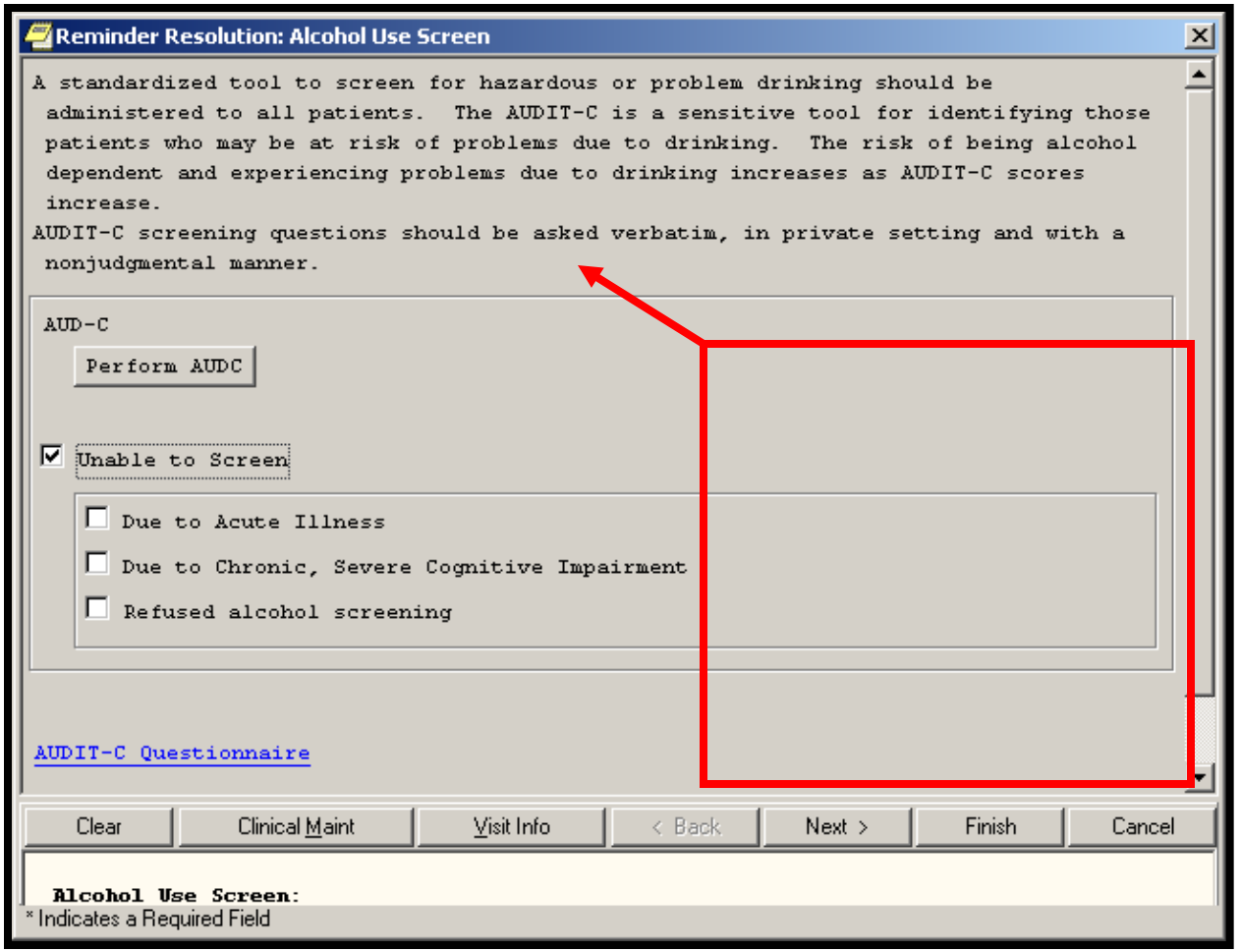
Early Concerns

- Local observations
- Variation in prevalence of positive screens across networks

  - 4.9% (4.3-5.5%)

  - 11.2% (10.3-12.1%)

“Educated” Clinicians



Clinical vs Survey AUDIT-Cs

Study of Discordance between
Documented and Survey AUDIT-Cs

- 6,861 outpatients who had both
  - Survey AUDIT-C and EMR AUDIT-C
  - Within 90 days
- Discordant screen = positive survey screen and negative clinical screen or vice versa

(Data provided by VA Office of Quality and Performance)
(Bradley, JGIM 2010)

Clinical vs Survey AUDIT-Cs

	Survey Screen	
	Negative (n 6,096)	Positive (n 765)
Clinical Screen	N (%)	N (%)
Negative (N 6,471)	6,003 (98)	468 (61)
Positive (N 390)	93 (2)	297 (39)

(Data provided by VA Office of Quality and Performance)

(Bradley, JGIM 2010)

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(Bradley, JGIM 2010)

Clinical vs Survey AUDIT-Cs

Discordance not Associated with…

- Order of survey and clinical screens
- Time between screens
- Timing regarding implementation
  - Dissemination of clinical reminder
  - Performance measure for BI

(Bradley, JGIM 2011)

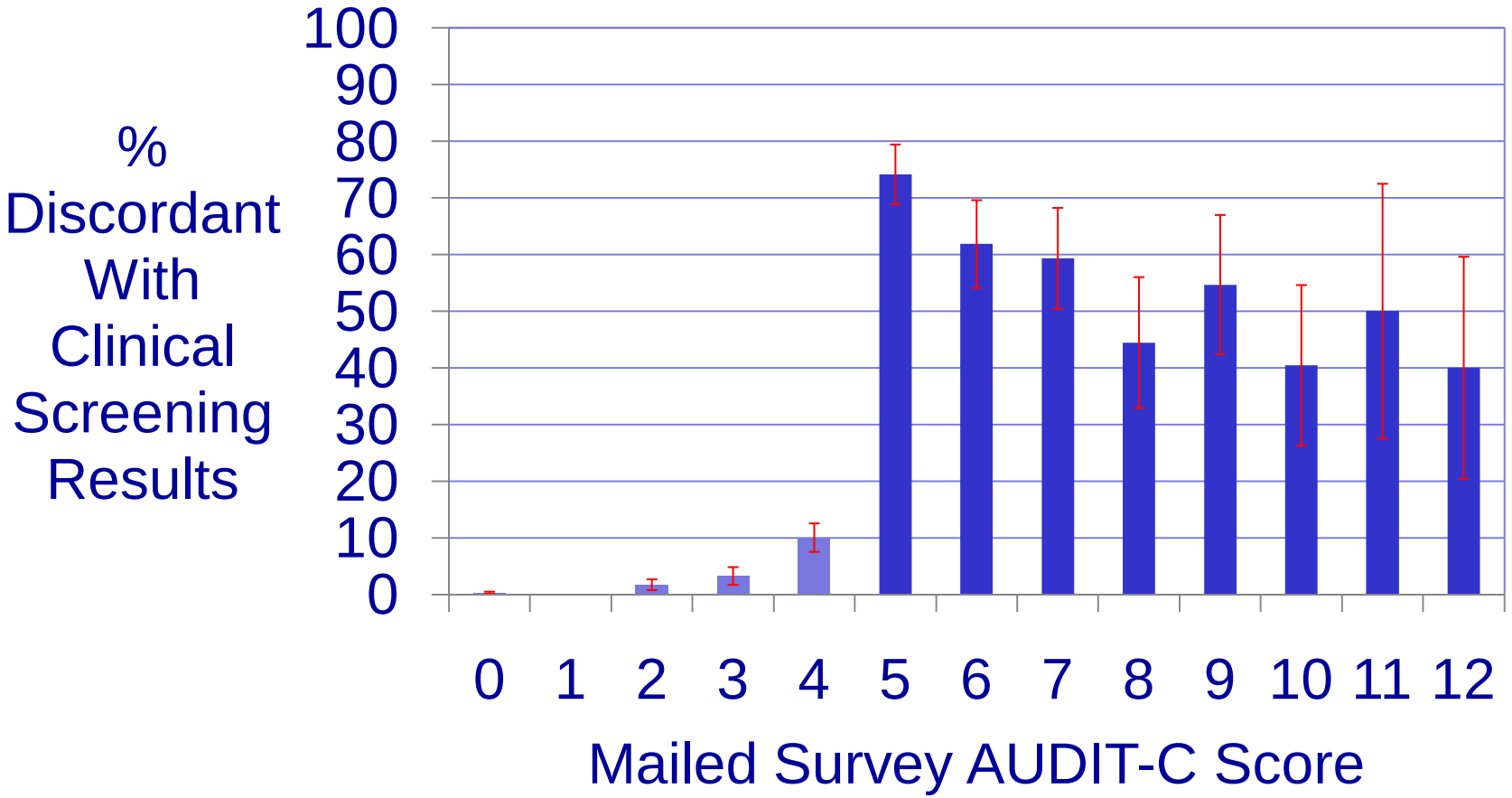
Clinical vs Survey AUDIT-Cs

Discordance was Associated with…

- Survey AUDIT-C scores

(Data provided by VA Office of Quality and Performance)
(Bradley, JGIM 2010)

Clinical vs Survey AUDIT-Cs



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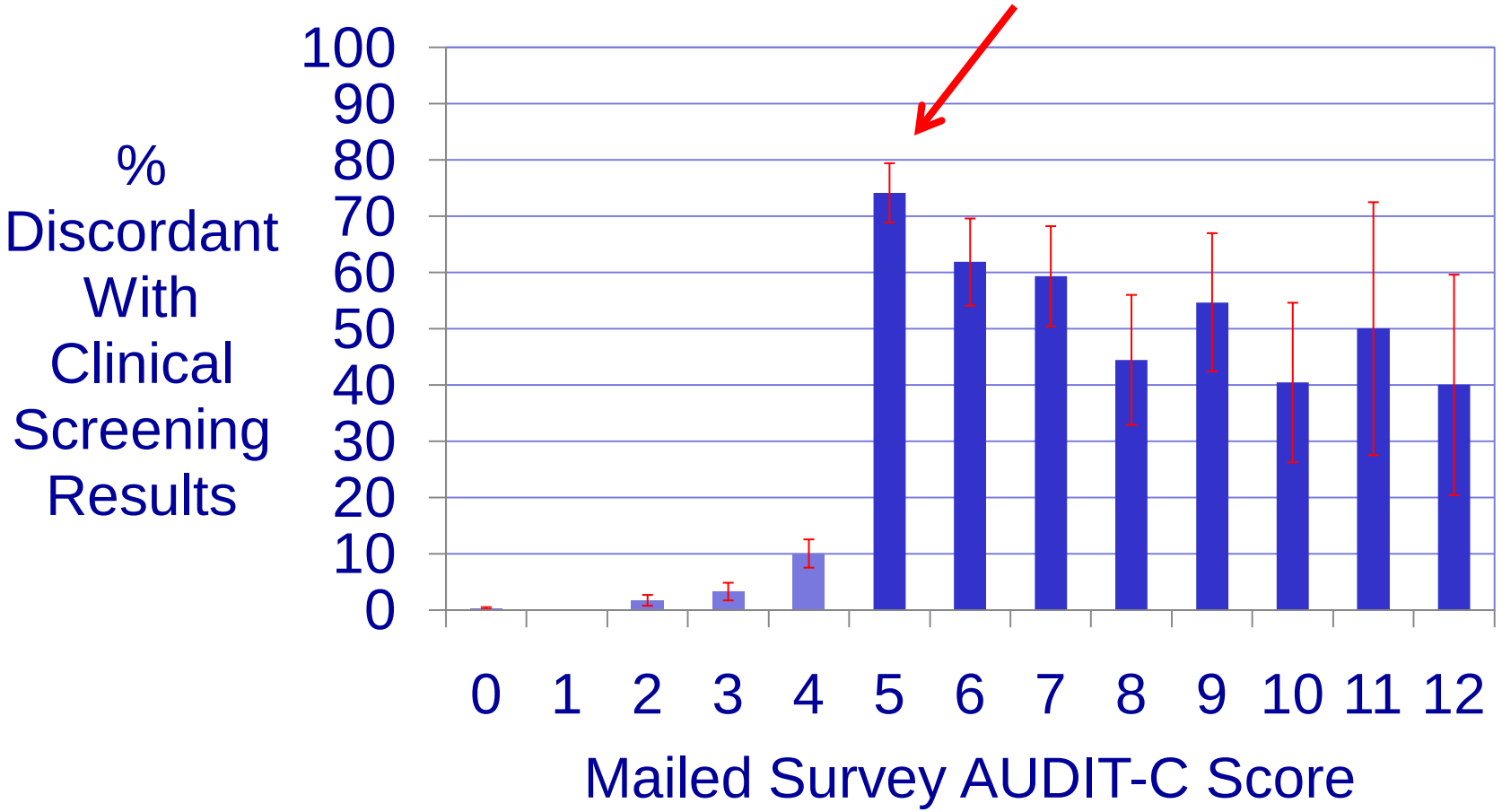

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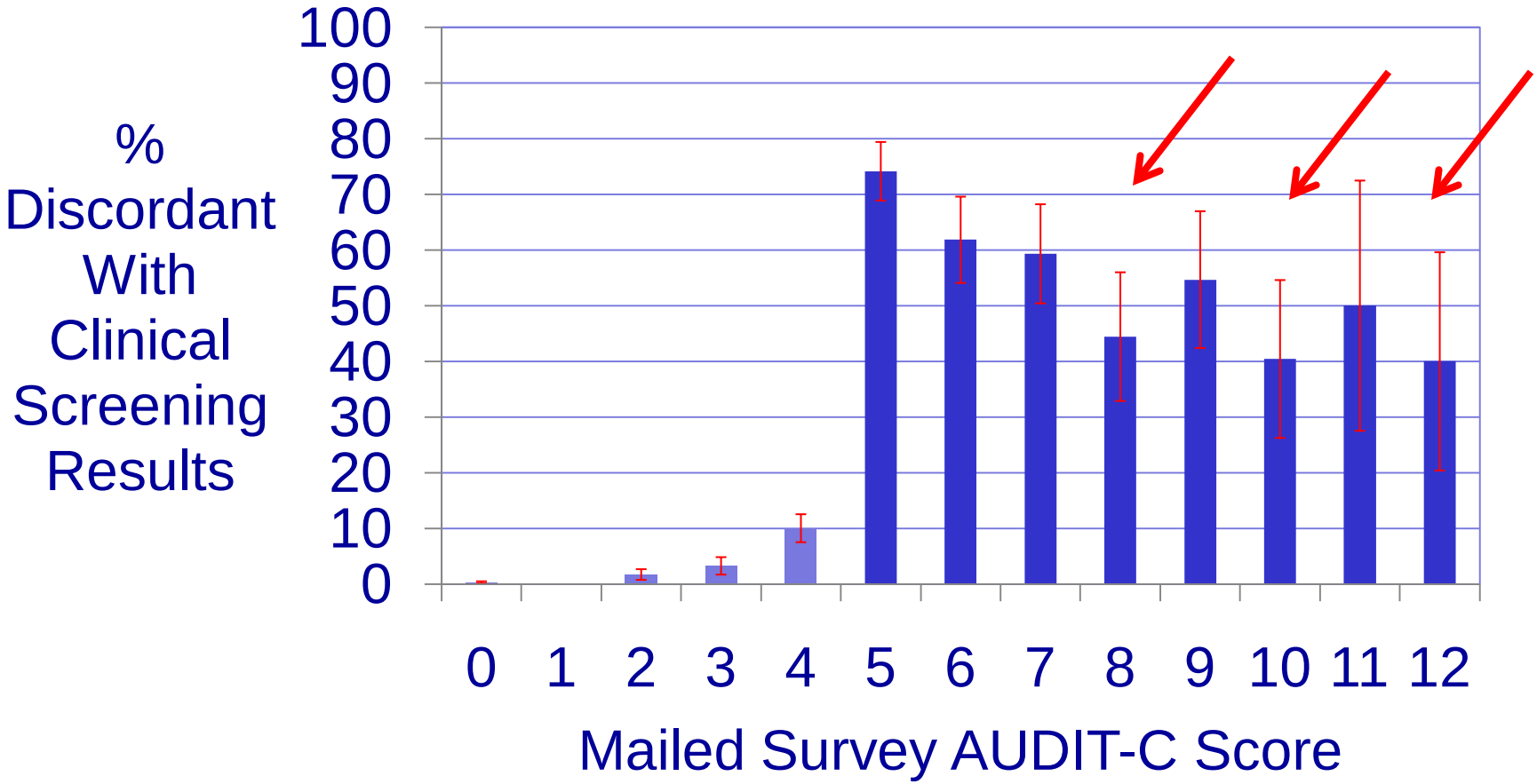

(Data provided by VA Office of Quality and Performance)

(Bradley, JGIM 2011)

Clinical vs Survey AUDIT-Cs

Discordance Also Associated with…

- African American (2-fold increase)
- VA network

(Data provided by VA Office of Quality and Performance)

(Bradley, JGIM 2010)

Quality of Screening

Summary

- Many patients with alcohol misuse are being missed by clinical screening
- Some networks missing more than others
- Use of a validated screen does not ensure valid screening

An Unexpected Consequence …

An Unexpected Consequence …

Variability in screening quality undermined the validity of our BI Performance Measure

BI Performance Measurement

$$\frac{\text{\# of patients with documented BI}}{\text{\# of patients with positive alcohol screens (AUDIT-C • •}}$$

BI Performance Measurement

Screening-based Performance Measure

$$\frac{\text{\# of patients with documented BI}}{\text{\# of patients with positive alcohol screens (AUDIT-C • •}}$$

BI Performance Measurement

Two Identical Networks with the Identical Underlying *True* Prevalence of Alcohol Misuse

Networks each screen 1000 patients

X

Y

BI Performance Measurement

Two Identical Networks with the Identical Underlying *True* Prevalence of Alcohol Misuse

Networks each screen 1000 patients	# Positive Screen /1000 Screened
X	50
Y	110

BI Performance Measurement

Two Identical Networks with the Identical Underlying *True* Prevalence of Alcohol Misuse

Networks each screen 1000 patients	# Positive Screen /1000 Screened
X	50
Y	110

BI Performance Measurement

Two Identical Networks with the Identical Underlying *True* Prevalence of Alcohol Misuse

Networks each screen 1000 patients	# Positive Screen /1000 Screened	# with BI /1000 Screened
X	50	30
Y	110	55

BI Performance Measurement

Two Identical Networks with the Identical Underlying *True* Prevalence of Alcohol Misuse

Networks each screen 1000 patients	# Positive Screen /1000 Screened	# with BI /1000 Screened
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BI Performance Measurement

Two Identical Networks with the Identical Underlying *True* Prevalence of Alcohol Misuse

Networks each screen 1000 patients	# Positive Screen /1000 Screened	# with BI /1000 Screened
X	50	30
Y	110	55

Recommendations

- Screening-based performance measures should be avoided
- BI performance is best measured with patient report surveys

Recommendations

- "In the last 12 months, at how many visits were you advised by a VA nurse, doctor or other health provider to drink below recommended limits or abstain from drinking alcohol?"
  None, 1 visit, 2-4 visits, 5-9 visits, • ‰ • • •
- Encourages identification and repeated BI

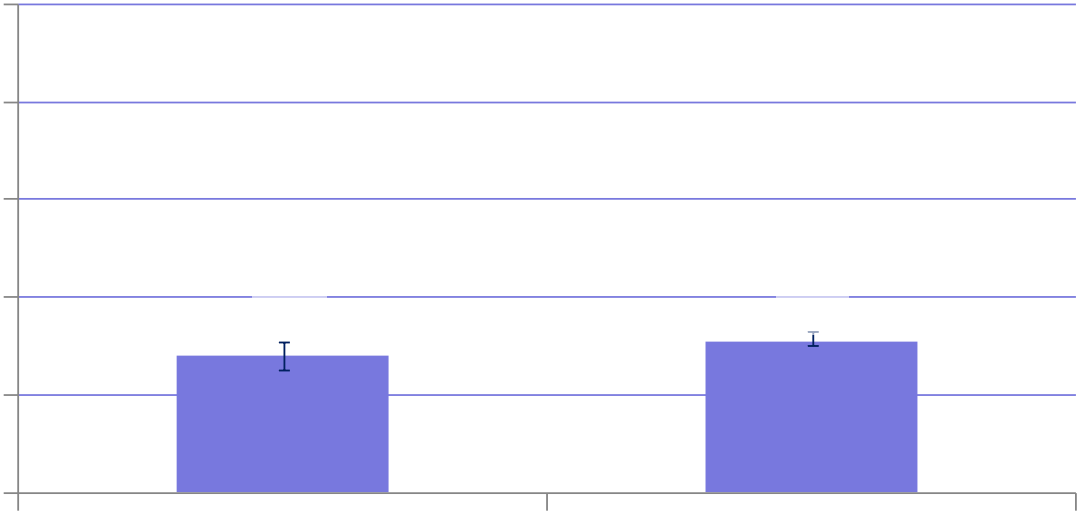
Part III
Are they just “ticking the boxes”?

Reasons for Guarded Optimism

Reasons for Optimism

Association between BI and Resolution of Alcohol Misuse at Follow-up Screening

% Who Screened Negative at Follow-up



BI Documented in EMR Clinical Reminder?

(Williams, JGIM 2010)

Reasons for Optimism

Association between BI and Resolution of Alcohol Misuse at Follow-up Screening

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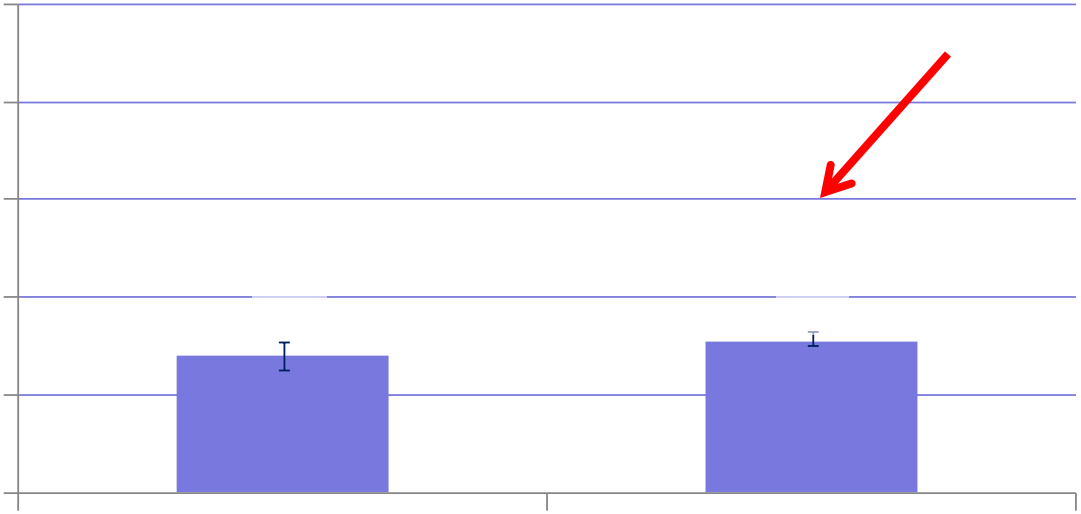

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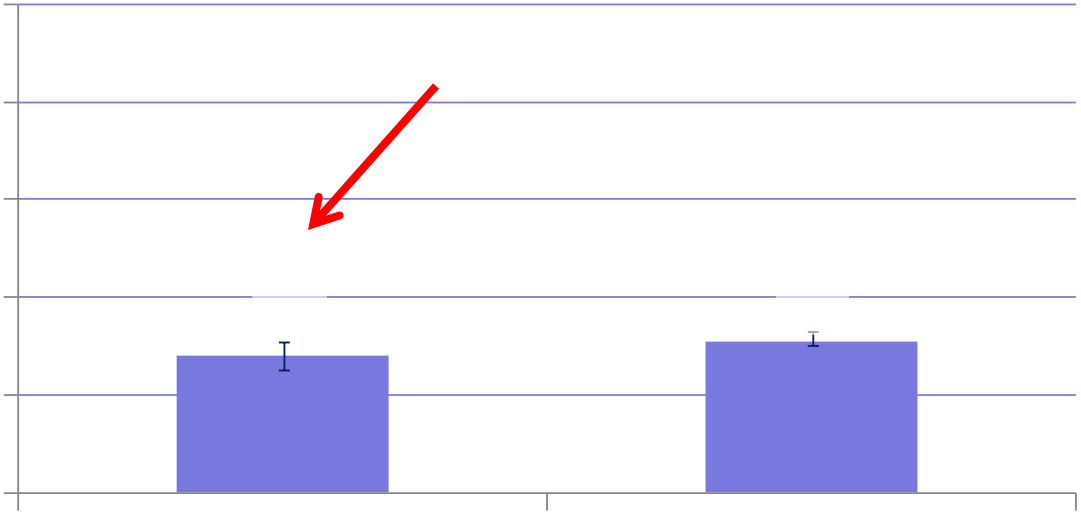

BI Documented in EMR Clinical Reminder?

(Williams, JGIM 2010)

Summary

- Performance measures linked to incentives plus EMR decision support:
  - Get SBI on the busy clinical agenda
  - Result in high rates of documented alcohol screening and BI
  - Are associated with resolution of alcohol misuse at follow-up screening

Next Steps

Ongoing Research

- VA RRP: Identification and evaluation of sites with “best practices” for screening & BI
- VA RRP: Who doesn’t need annual screening?
  - Such low risk of converting to positive screen that the screening interval could be increased

Next Steps

Ongoing Research

- VA IIR: Is the AUDIT-C a valid measure of change? Is resolution of alcohol misuse at follow-up screening associated with improved health outcomes?
- NIAAA R01: Can a collaborative care model improve outcomes of primary care patients with AUD not ready for treatment?

Thank You!

Questions?