Public Health Approaches to Early Trauma Focused Intervention Development

Douglas Zatzick, MD
Associate Professor of Psychiatry &
Faculty Harborview Injury Prevention Center
University of Washington School of Medicine

Supported by NIMH, AHRQ, & CDC

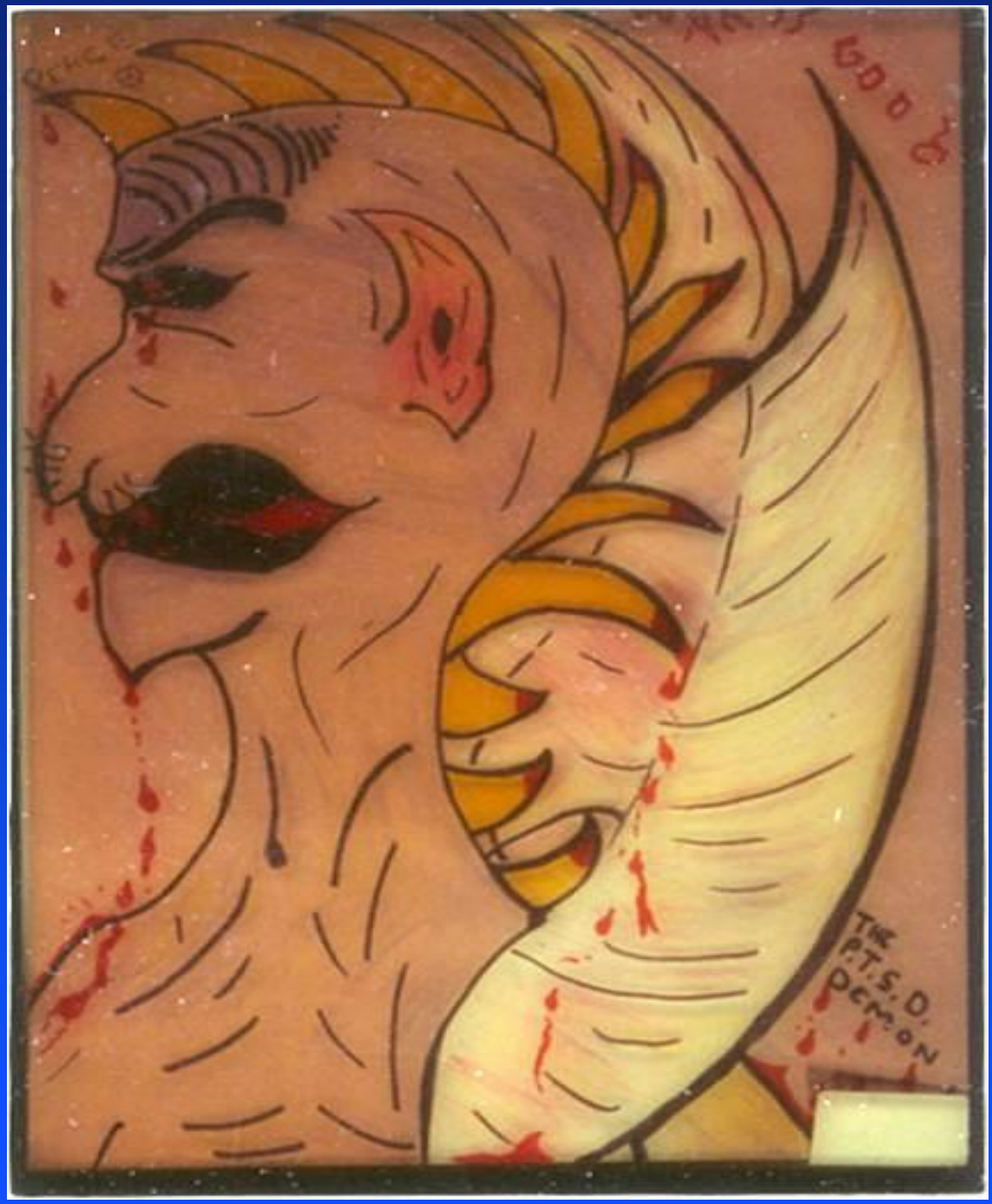
Interdisciplinary Collaborative Group

University of Washington
Peter Roy-Byrne MD
Joan Russo PhD
Frederick Rivara MD MPH
Gregory Jurkovich MD
Chris Dunn PhD
Amy Wagner PhD
Lucy Berliner MSW
Edwina Uehara MSW PhD
Wayne Katon MD

University of Michigan
Sandro Galea MD DrPH

Overview

- Clinical case studies & IOM tasks
- Public health approaches/methods
- Early PTSD pharmacology
- Early PTSD psychotherapy
- Co-morbidities & stepped care


THE P.T.S.D. DEMON

Case Study of a Wounded Marine

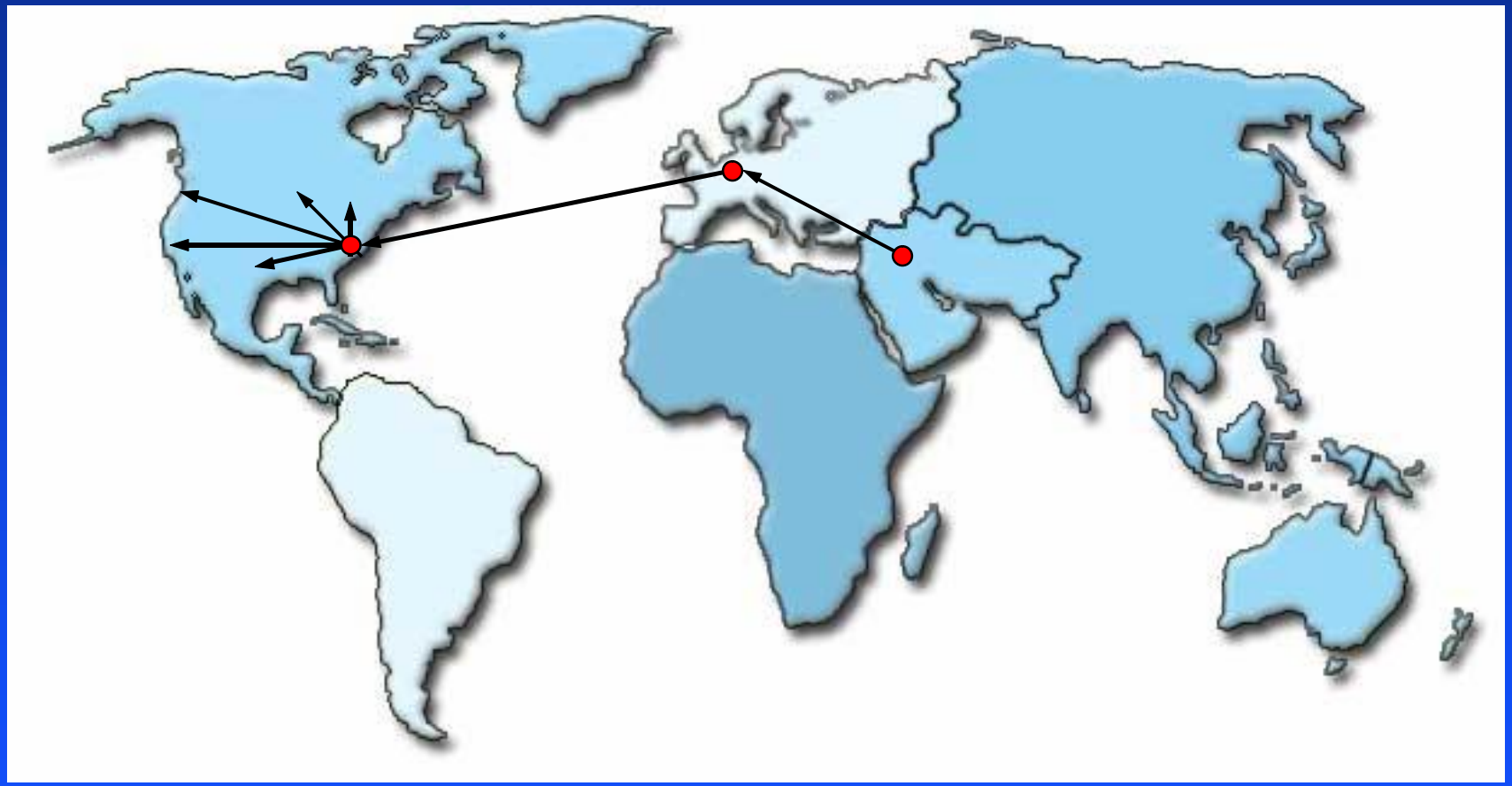
- Marine
- Humvee vs. IED
- Lumbar and lower extremity ftxs.
- Iraq to US care trajectory
- Patient's primary concern:

  "I want to keep my foot"
- Pain, anxiety and depression

IOM PTSD Treatment: Statement of Task

- Does evidence support the value of early intervention?

Care Across Service Delivery Sectors



IOM PTSD Treatment: Statement of Task

- Does evidence support the value of early intervention?
- Generalizability of findings
- Restrictions regarding
  - patient population
  - providers
  - setting

Case Study of Recurrent Trauma

- Male veteran
- Pre-military psychiatric history
- Striker crash in Iraq
- Develops PTSD
- As civilian second motor vehicle crash
- Patient driving alcohol intoxicated
- Passenger dies

The New England Journal of Medicine 1986

SPECIAL ARTICLE

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IOM PTSD Treatment: Statement of Task

- Does evidence support the value of early intervention?
- Generalizability of findings
- Restrictions regarding
  - patient population
  - providers
  - setting
- PTSD & substance co-morbidities

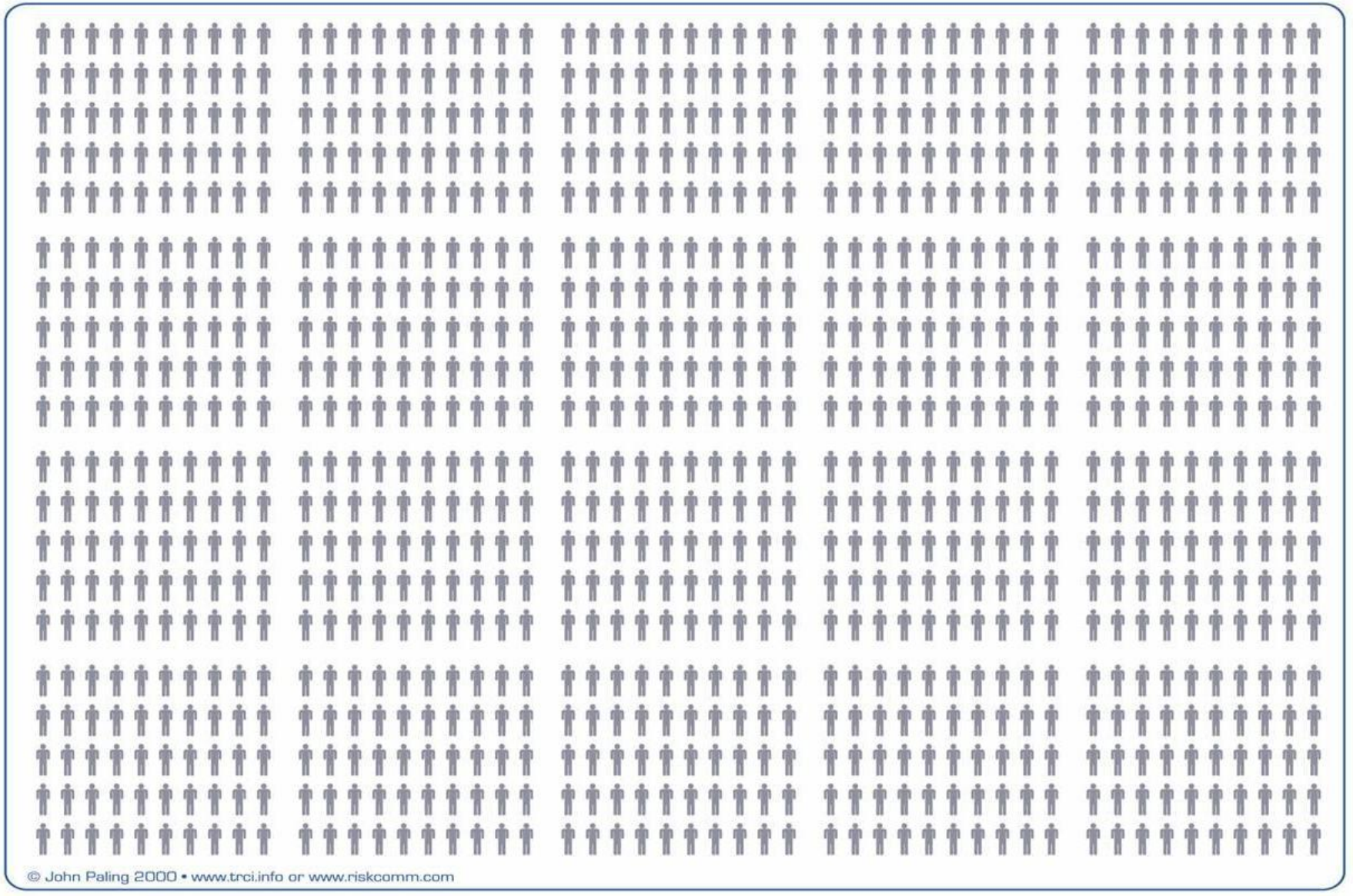
Public Health Approaches

Translation of Research to Practice:

(Glasgow & Emmons Ann Rev Pub Health 2006, IOM Crossing the Quality Chasm 2001)

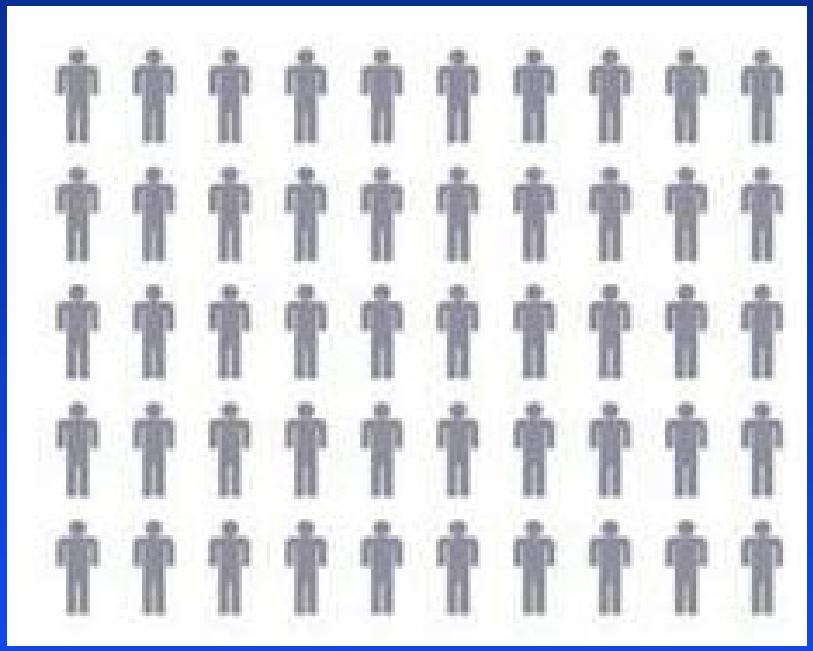
- Multiple domains of evidence
  - Intervention efficacy
  - Generalizability (representative samples)
    - A. Patients
    - B. Providers
    - C. Practice settings
- Expansion of CONSORT flow diagrams

Methods: Trauma Exposed Population

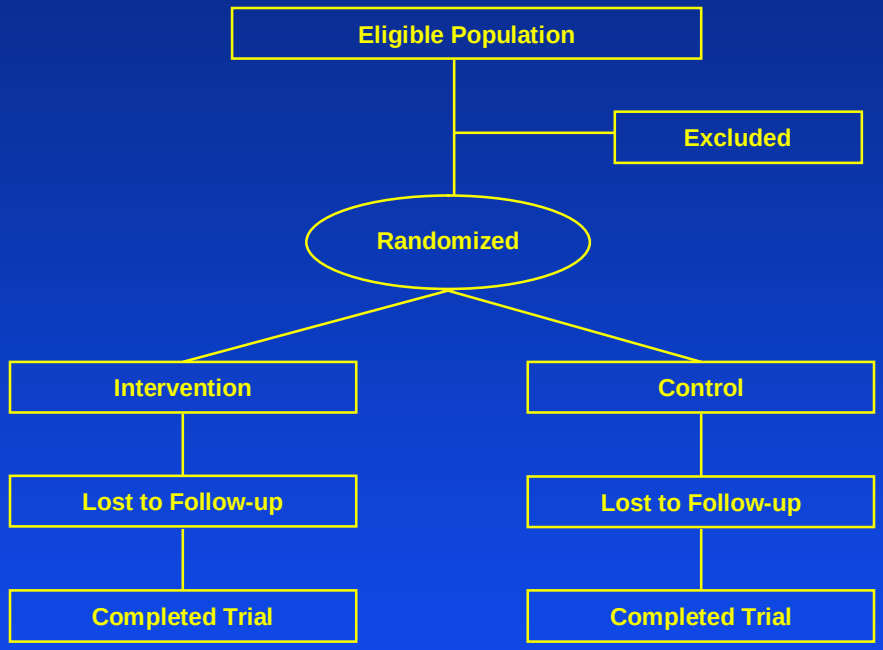


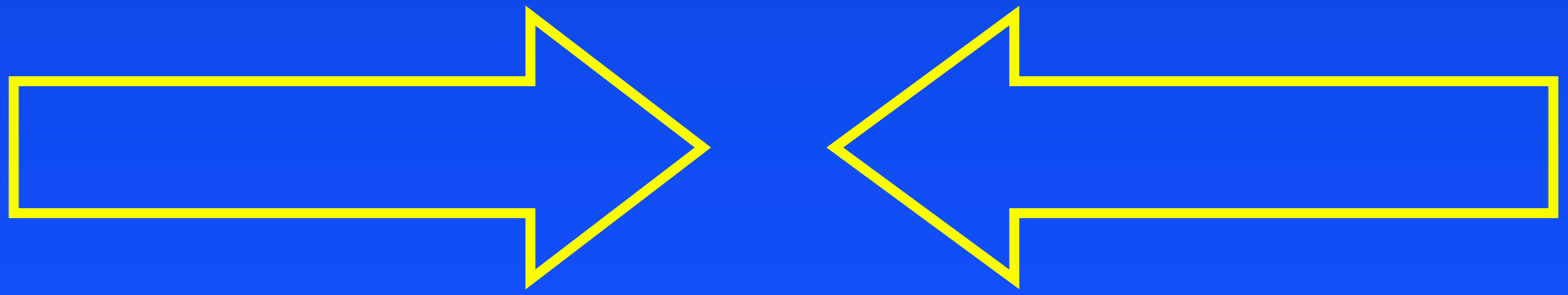
Public Health Approaches to Clinical Trials

Exposed Population

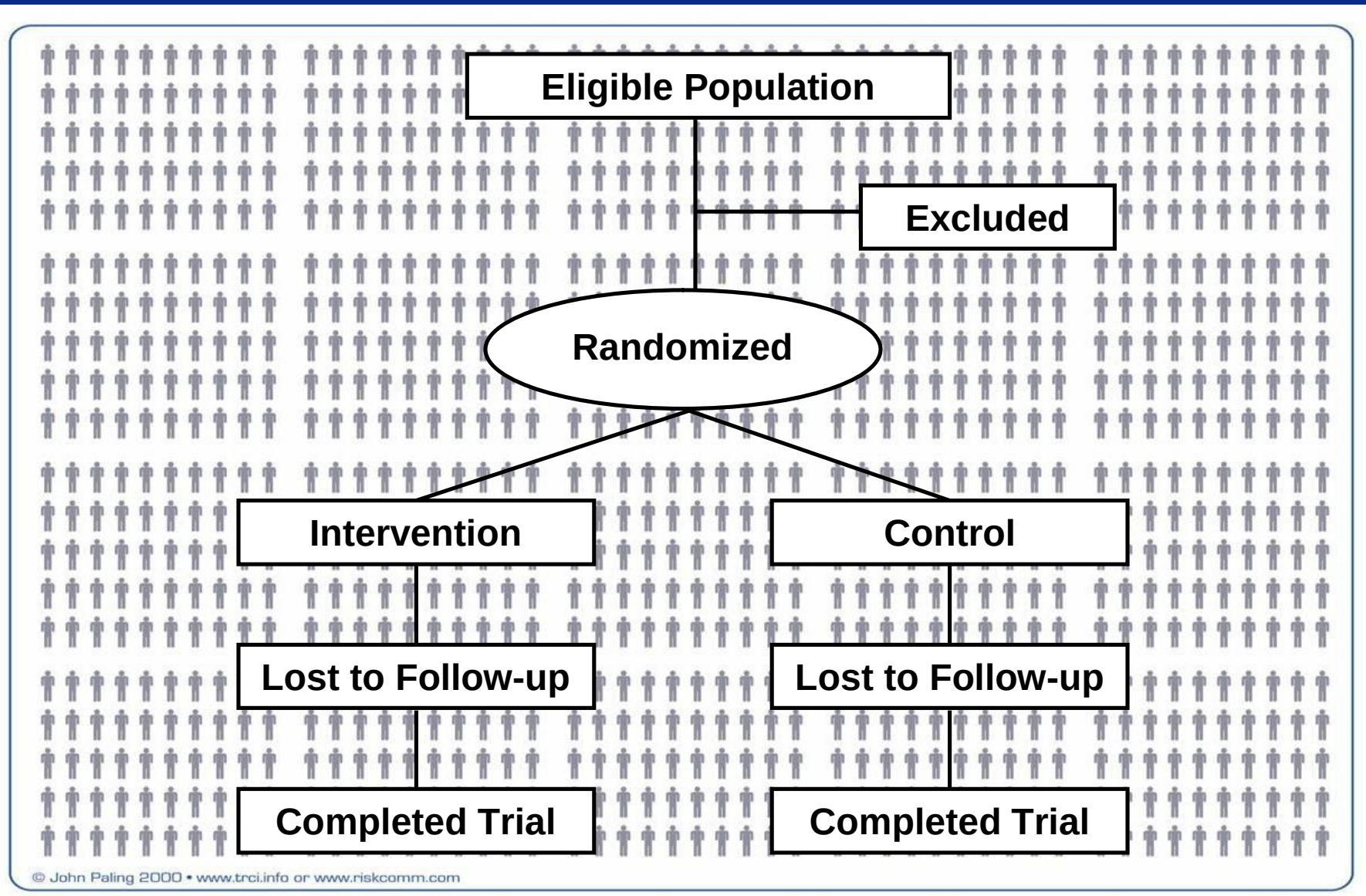


Randomized Trial

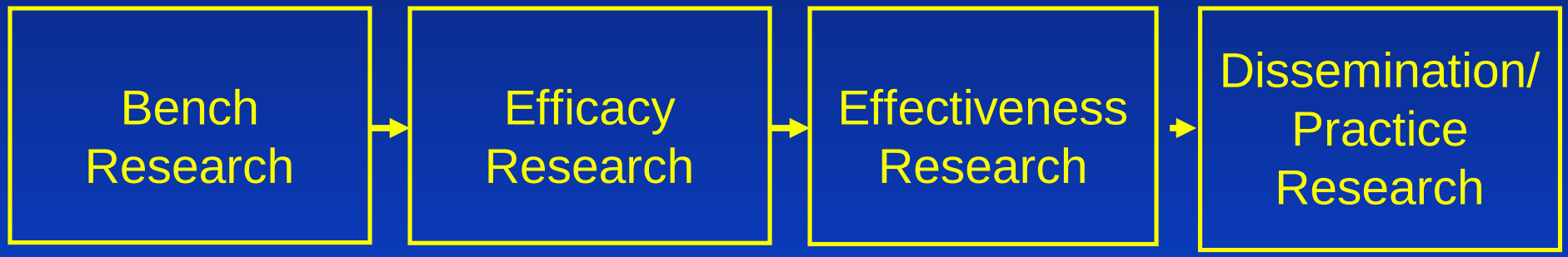




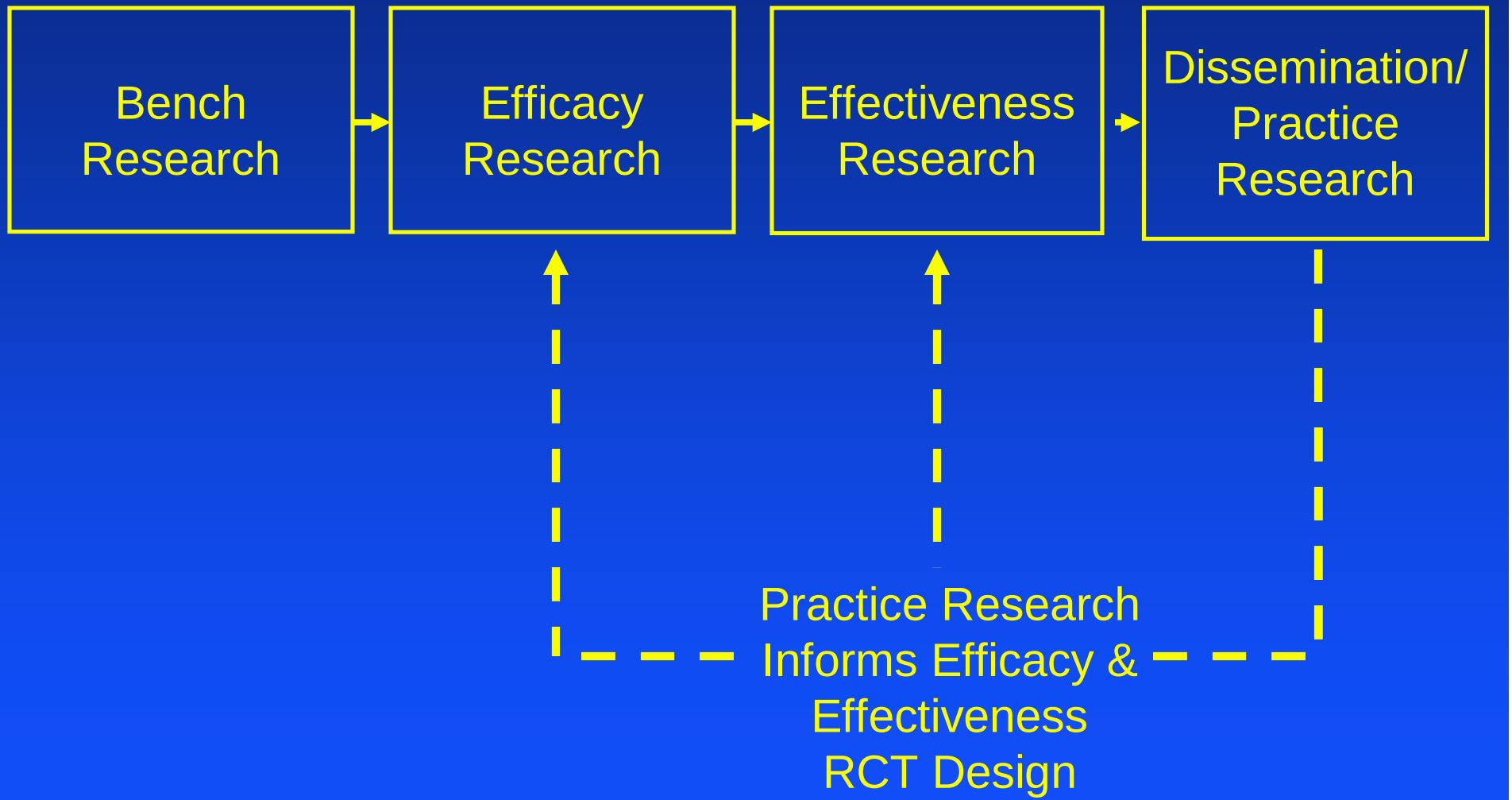
Population Based Randomized Clinical Trials



Research to Practice Intervention Development



Practice to Research Intervention Development



Early PTSD Pharmacotherapy

Candidates for Secondary PTSD Prevention

Neurobiological System/ Compounds	Efficacy	Effectiveness
HPA/ Glucocorticoids	→	→
Andrenergic/ Beta-Blockers	→	→
Opiod/ Analgesics	→	→

Evidence Base for Early Pharmacological Intervention in Adults

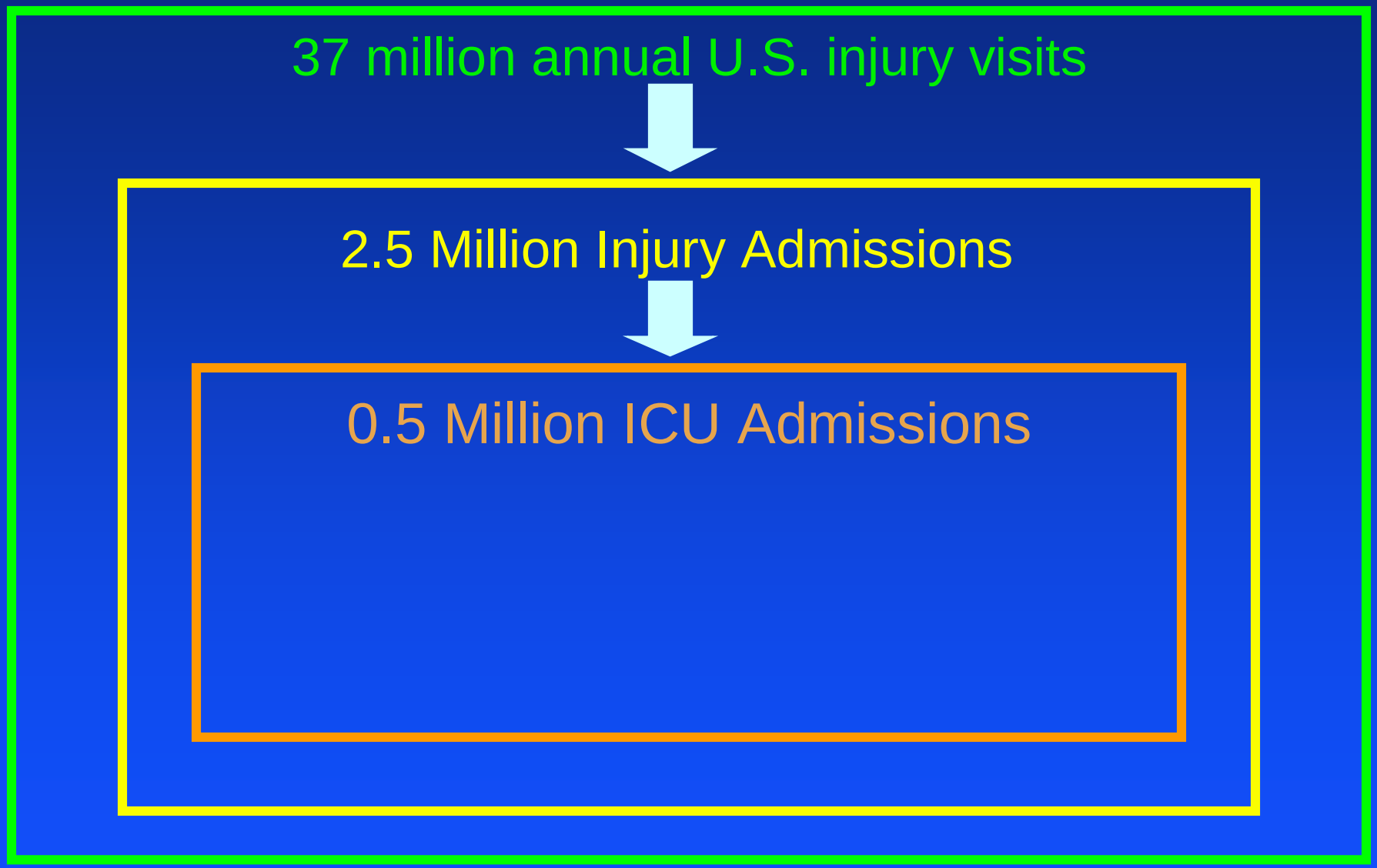
- Corticosteroids
  - Supporting Efficacy (Schelling et al., 2004)
- Propranolol
  - Supporting Efficacy (Pitman et al., 2002, Vaiva et al 2003)
  - No effect (Stein et al., ISTSS 2005)

Population-based Approaches to Early Intervention

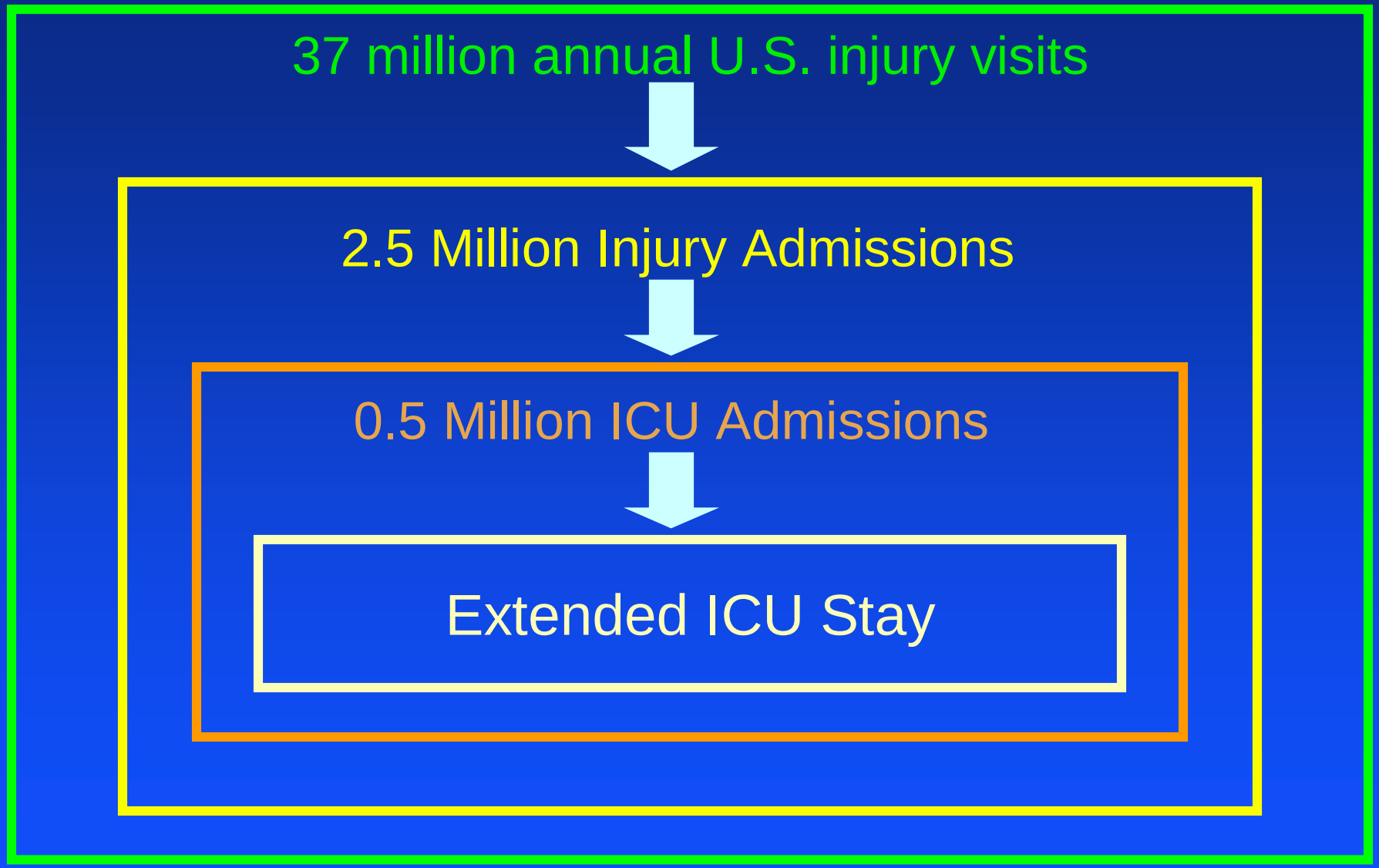
37 million annual U.S. injury visits

Population-based Approaches to Intervention Development

Population-based Approaches to Intervention Development

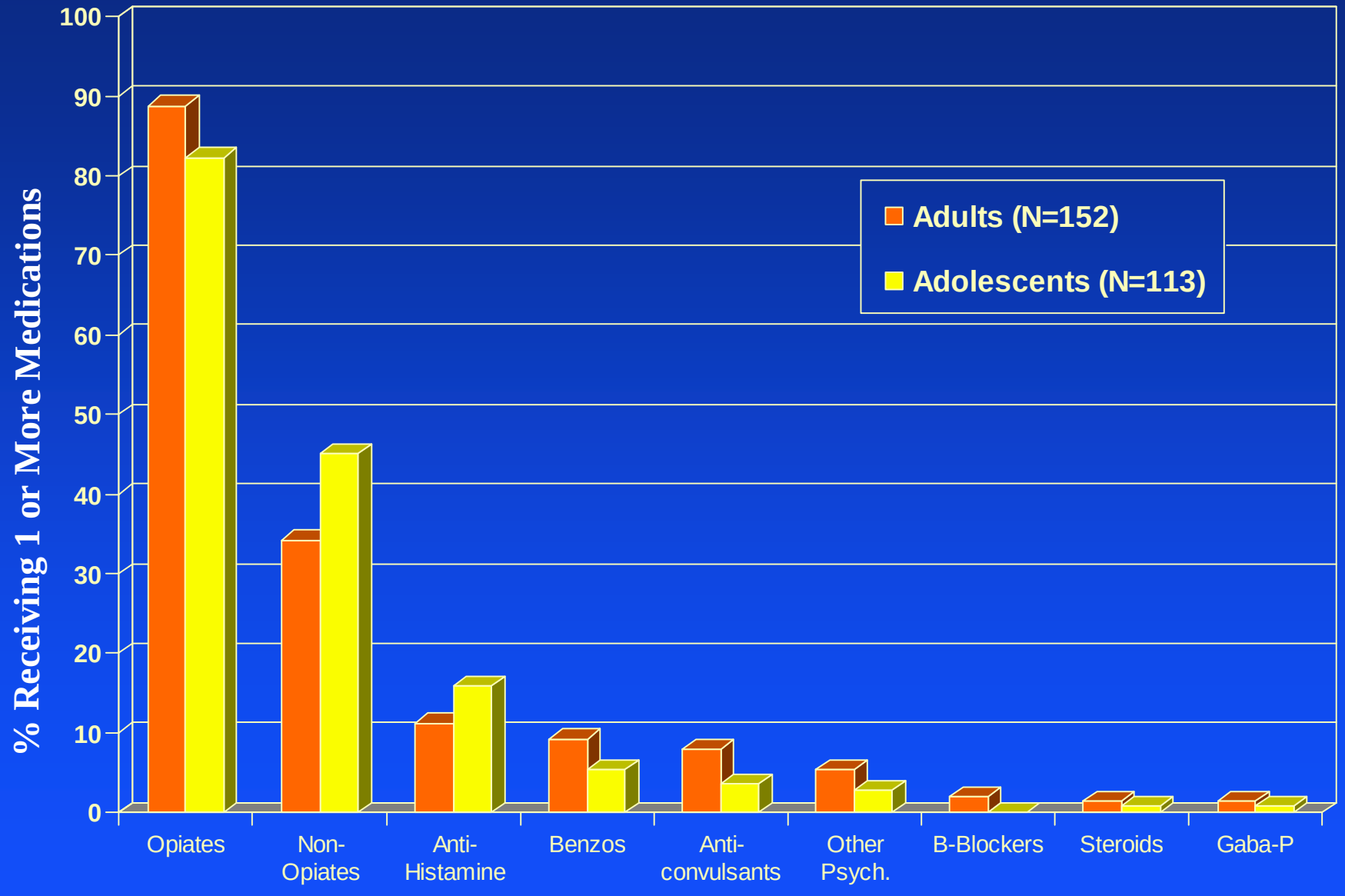


Population-based Approaches to Early Intervention



Pharmacoepidemiologic “Snapshot” of Acute Care Inpatient Medications

(Zatzick & Roy-Byrne 2006)



A National Study of the Costs & Outcomes of Trauma

- 12 States nationwide
- 69 hospitals
  - 18 level I trauma centers
  - 51 Non-trauma center hospitals
- 2,931 patients

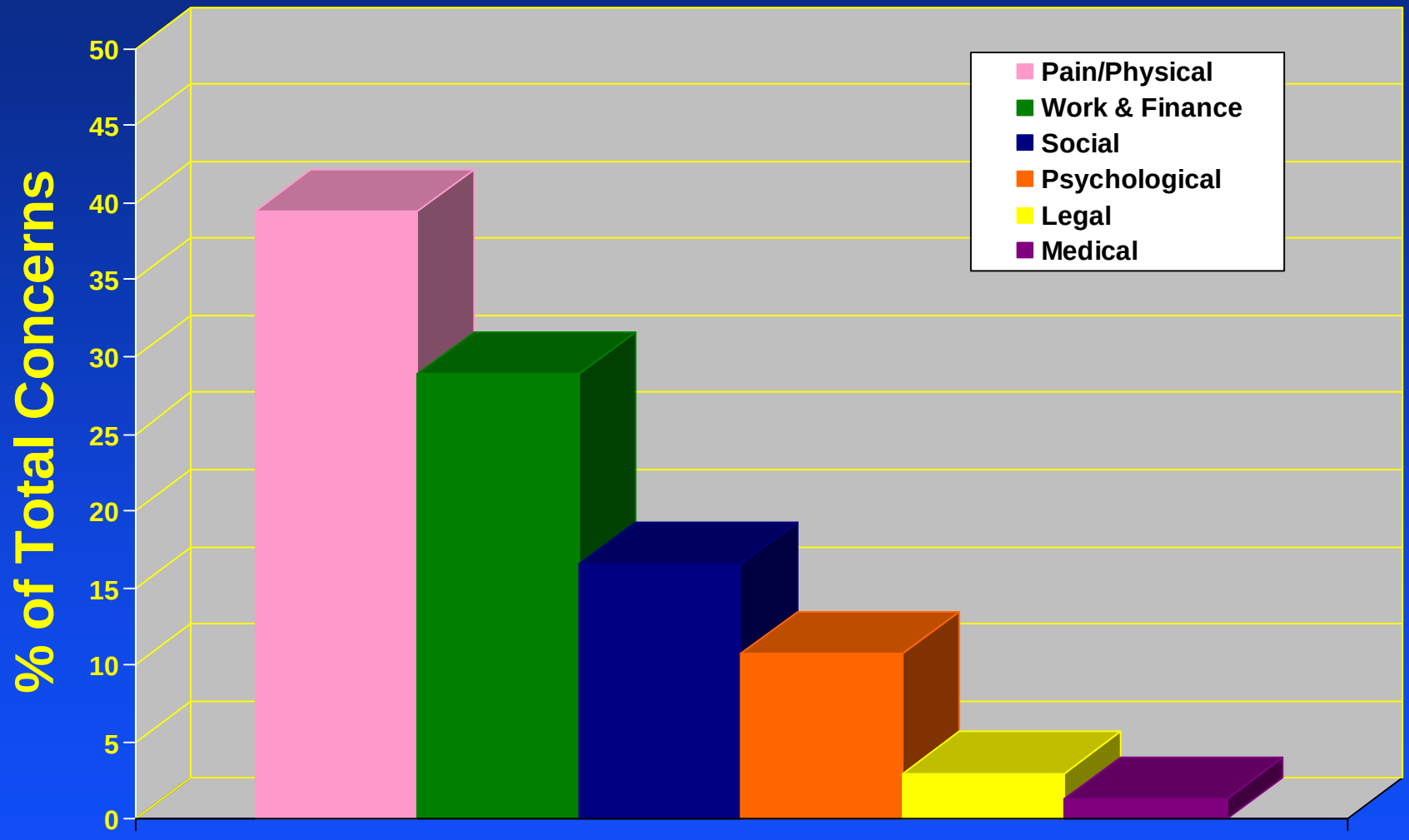
Mackenzie, Rivara, Jurkovich et al., 2006

NSCOT Results: PTSD Symptoms

- 22.9% 12-month PTSD symptoms (PCL)
- Early symptomatic distress ↑ PTSD
  RR = 6.6 (4.1,10.5)
- Early pain ↑ PTSD
  RR = 4.9 (3.4, 7.1)

Zatzick et al., Submitted

Early Post-Injury Patient Concerns

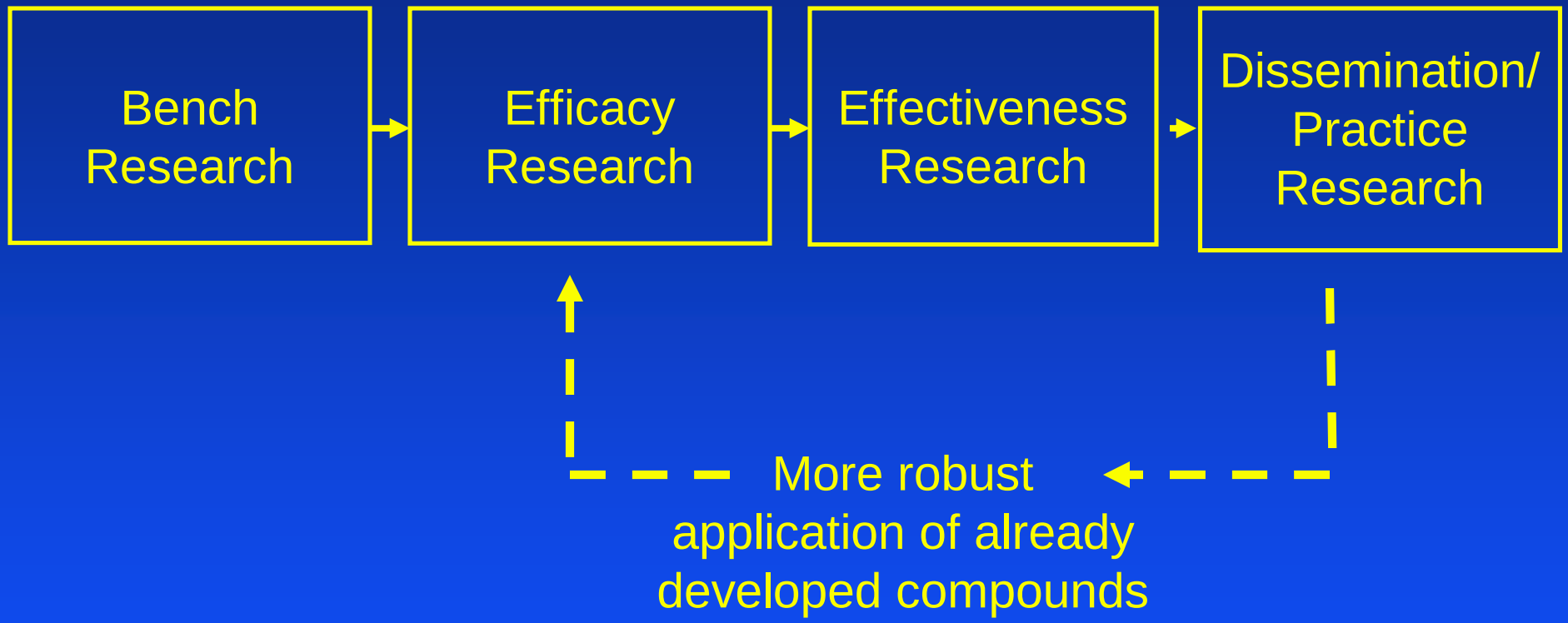


Zatzick, et. al., Psychiatry In Press

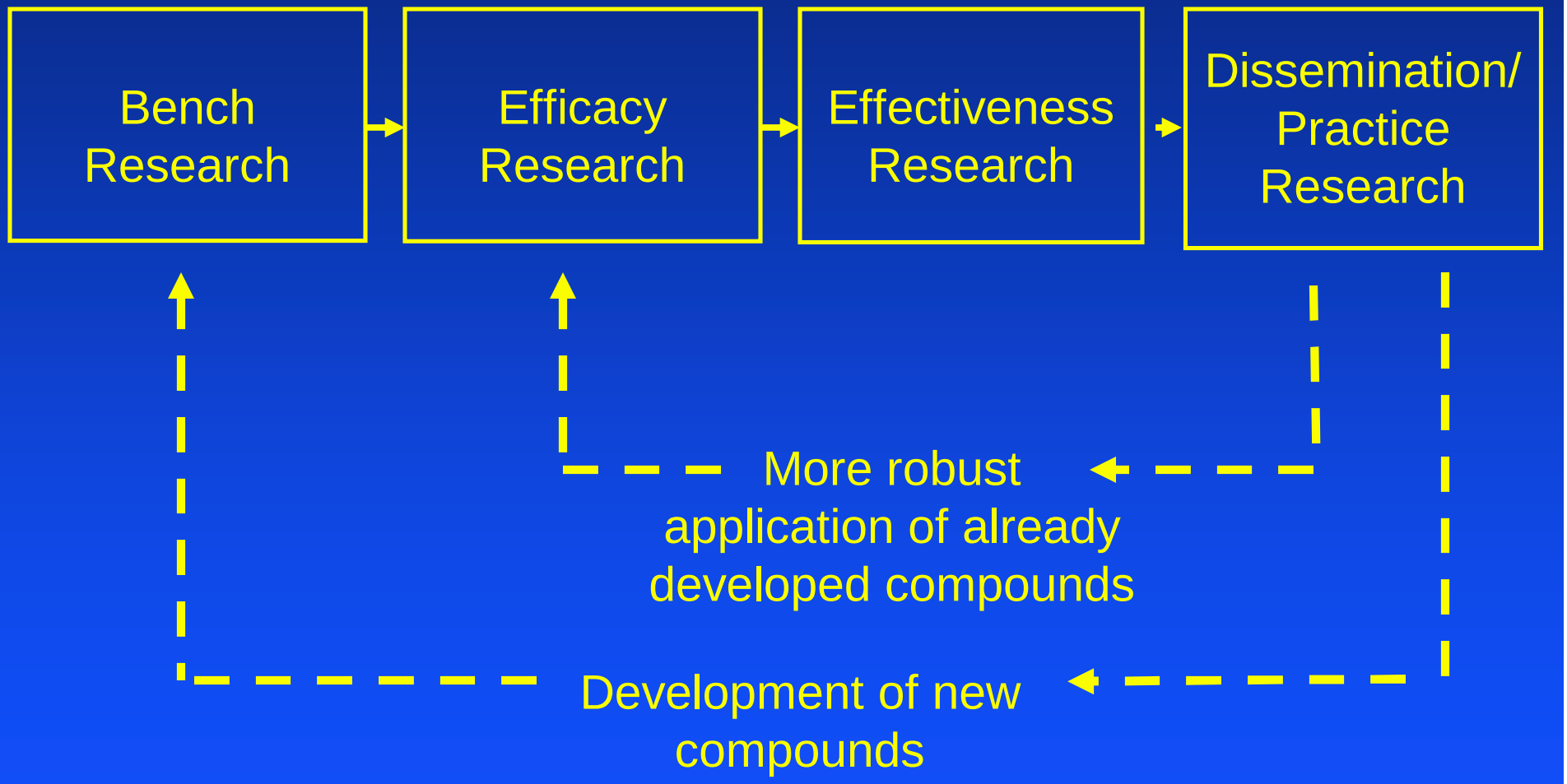
Summary: Early Pain & PTSD

- Nationwide pain predicts PTSD
- Patients concerned about pain
- Providers prescribing analgesics

Practice to Research Intervention Development



Practice to Research Intervention Development



Early Psychotherapy Intervention

Evidence Base for Early Psychotherapy

- Cognitive Behavioral Therapies
  - Multiple studies supporting efficacy
  - APA, NICE & ISTSS Guidelines
- Few CBT trials include substance users

PTSD & Substance Misuse Co-morbidity: (Chilcoat & Breslau 1998)

- American Civilians after 9-11
  (Galea & colleagues)
- Disaster exposed adolescents
  (Reijneveld et al. 2003, 2005)
- Injury
  (Soderstrom et al., 1997, Gentilello et al 1999)
- Combat veterans

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JULY 1, 2004 VOL. 351 NO. 1

Combat Duty in Iraq and Afghanistan, Mental Health Problems, and Barriers to Care

Charles W. Hoge, M.D., Carl A. Castro, Ph.D., Stephen C. Messer, Ph.D., Dennis McGurk, Ph.D., Dave I. Cotting, Ph.D., and Robert L. Koffman, M.D., M.P.H.

PTSD & Alcohol Co-morbidity

Hoge et al 2004

- 6-20% symptomatic with PTSD
- 18-35% alcohol misuse

The New England Journal of Medicine 1986

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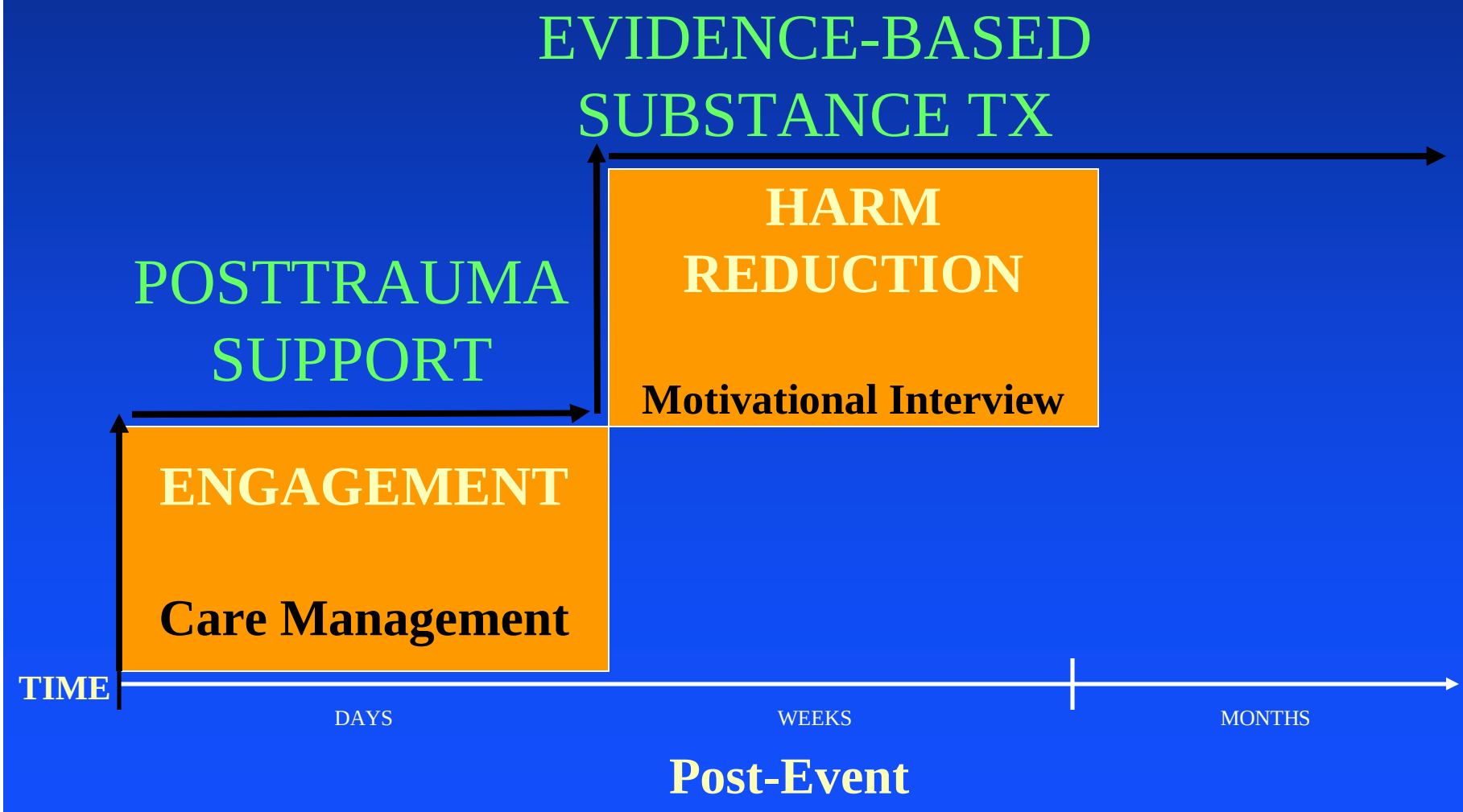
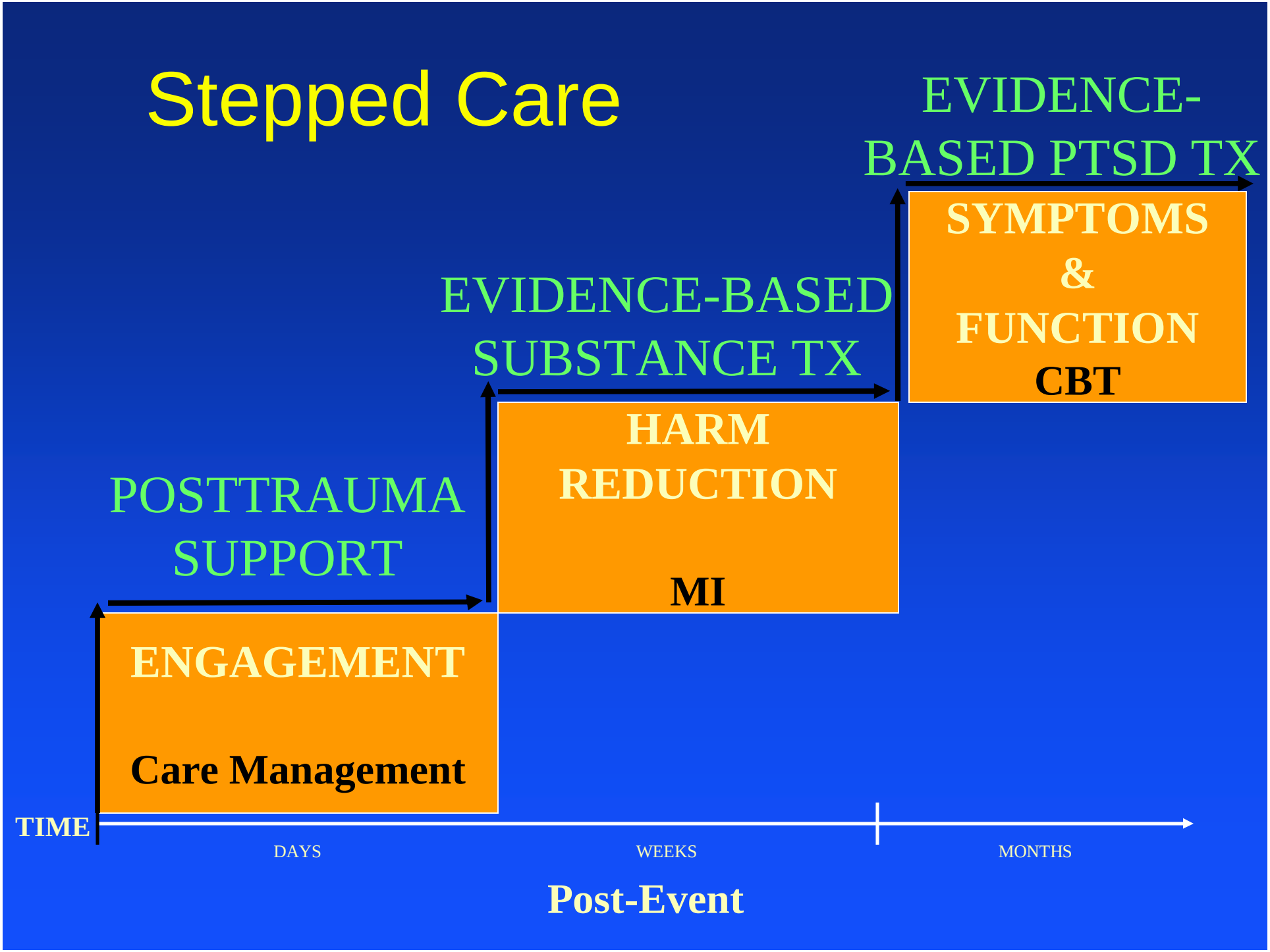
Stepped Care

Stepped Care



Stepped Care

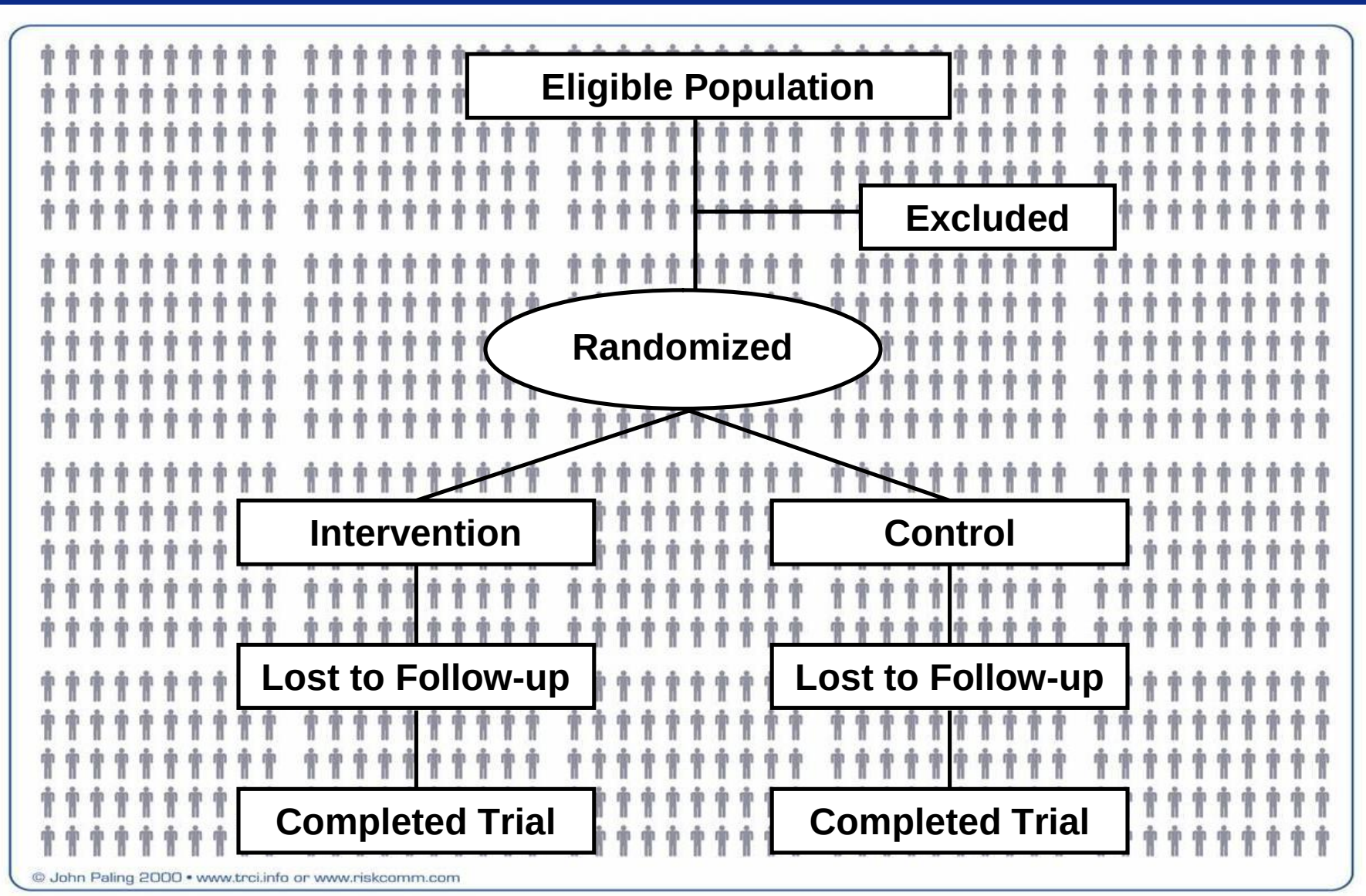


A Randomized Trial of Stepped Collaborative Care for Acutely Injured Trauma Survivors

- Engage hospitalized patients
- Link acute medical care to community care
- ↓ Alcohol misuse
- ↓ Recurrent traumatic injury
- ↓ PTSD symptoms

Zatzick, Roy-Byrne, Russo, Rivara, Droesch, Wagner, Dunn, Jurkovich, Uehara, and Katon. Arch Gen Psychiatry 2004

Population Based RCT Design



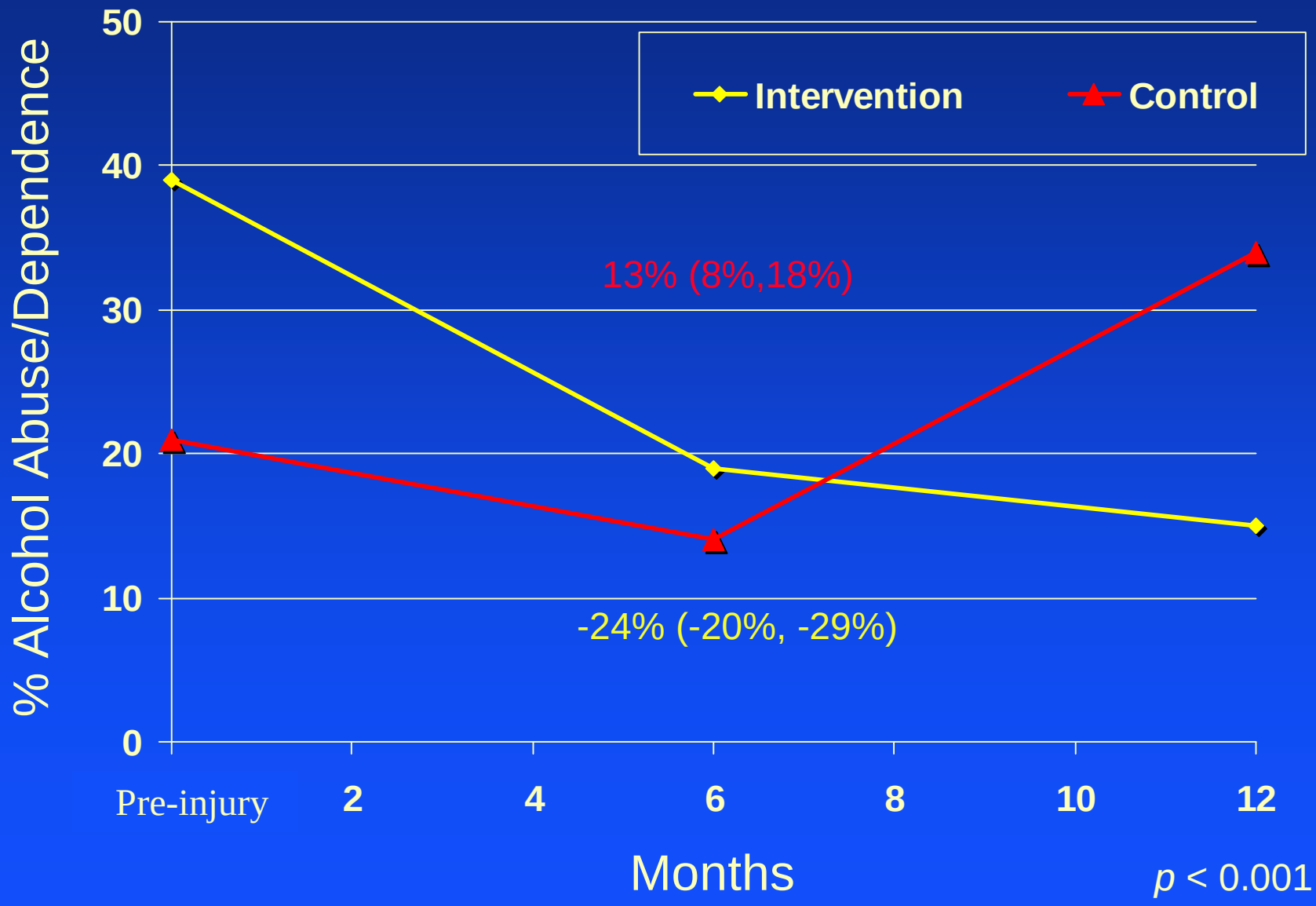
Baseline Characteristics of Patients Included in the Investigation Compared to all Eligible Adults Admitted to Harborview (7/01-1/02)

Variable	In Study (n=120)	All Others (n=2355)	*p*
Age (Mean)	39	42	n.s.
Injury Severity (ISS)	10.8	10.8	n.s.
Female Gender (%)	33	27	n.s.
Intentional Injury (%)	21	19	n.s.
Alcohol Tox + (%)	28	28	n.s.
Inpt. LOS (mean days)	6.2	5.9	0.003

Outcomes & Data Analyses

- PTSD symptoms (PCL)
- Alcohol abuse/dependence (CIDI)
- Recurrent injury admissions (automated data)
- Random-coefficient regression
  - Group * time interaction

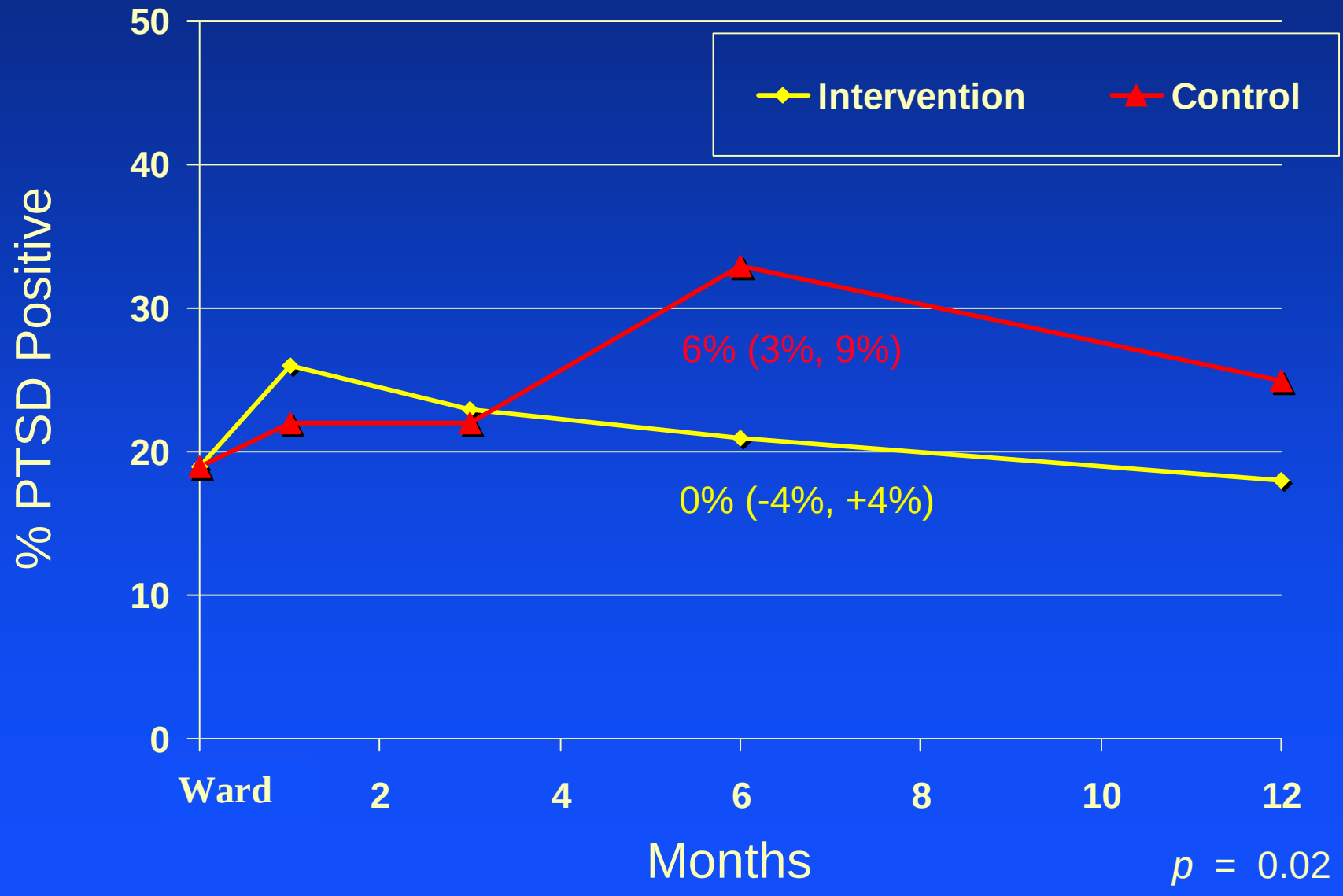
Results: Alcohol Abuse/Dependence



Stepped Care Results: Readmissions for New Injuries

- 50% reduction in new injury admissions (automated data)
  - 5% of intervention
  - 10% of controls
  - Adjusted OR = 0.43 (95% CI, 0.10, 1.96)

Results: PTSD



p = 0.02

Population Based Stepped Care for Veterans: Engel & Katon IOM Report 1999

- Stepped care model
  - Initial screening
  - Low intensity treatment
  - High intensity combined intervention targeting persistent symptoms
- Delivered in real world settings

From “Strategies for the Protection of Deployed Forces” IOM 1999