

The Trauma Survivors Outcomes & Support (TSOS) Trial as an ePCT Training Case Study

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Overview: TSOS as an ePCT Case Study

- NIH Collaboratory ePCT training themes relevant to TSOS

NIH Collaboratory ePCT Training Workshop: Key Themes for TSOS

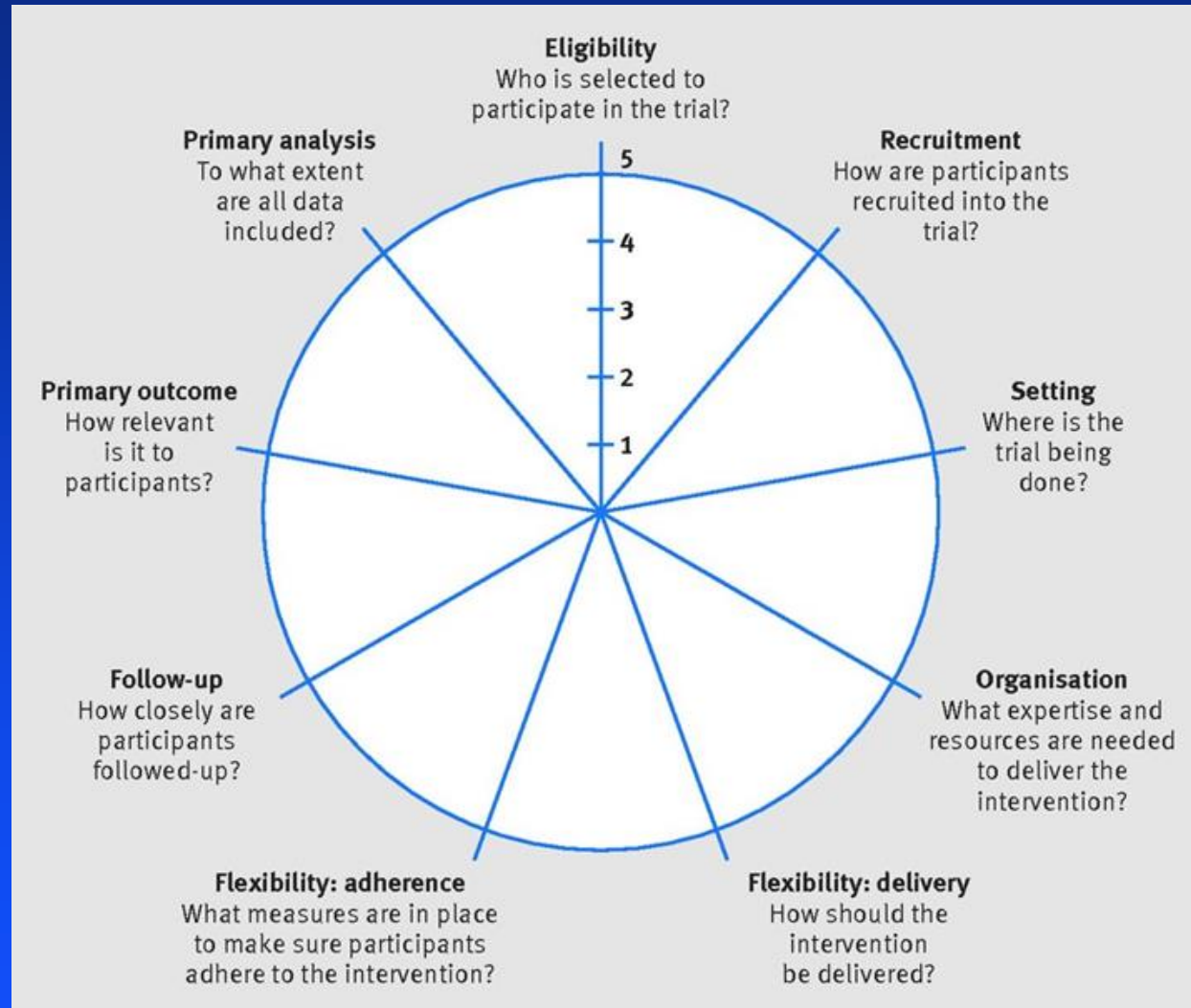
- Two day workshop: Feb 20-21, 2018
- NIH Collaboratory faculty
- Key Themes relevant to TSOS
 - PRECIS-2 as a pragmatic trial descriptor
 - Pragmatic trials target a clinical decision
 - Follow-up endpoints in ePCTs
 - Tradeoffs inevitable in pragmatic trials
 - Pragmatic trial regulatory complexity
 - Choice of cluster randomized design

Overview: TSOS as an ePCT Case Study

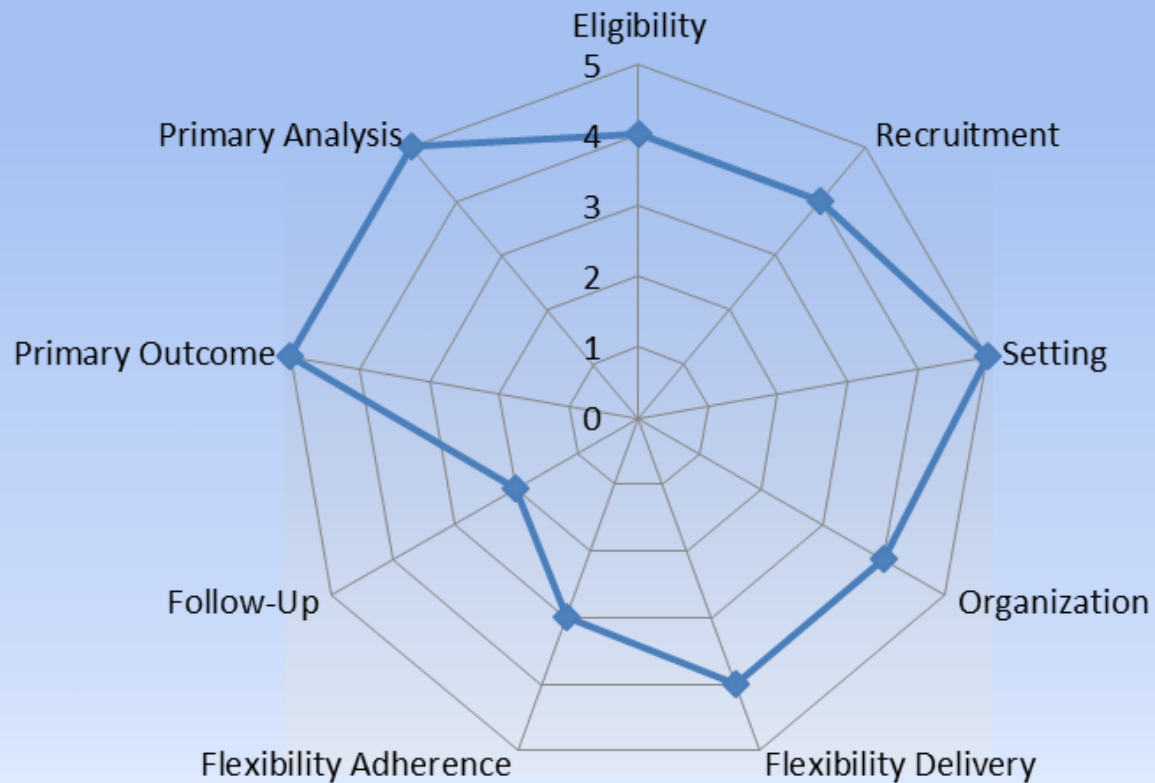
- TSOS PRECIS-2 Wheel
- TSOS historical development & update
- TSOS policy decision target
- TSOS & follow-up intensity
- TSOS regulatory complexity
- Cluster randomized design choices

TSOS as an ePCT Training Case Study

PRECIS-2 Wheel



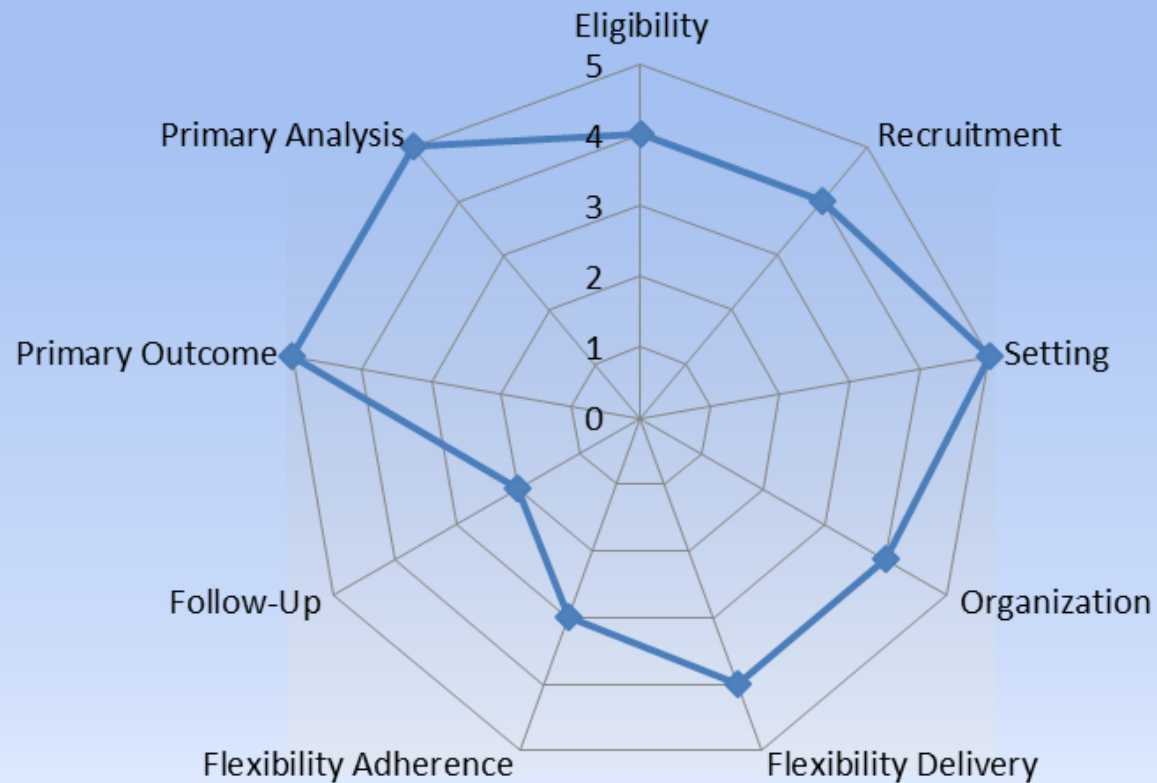
TSOS PRECIS-2 Wheel



TSOS Study Design

- 25 US trauma centers
- Stepped wedge cluster randomization
- All sites begin recruiting controls
- Intervention “turned on” at each site
- 40 patients per/site goal (960 pts. total)
- Patients provide informed consent
- Baseline PTSD & comorbidity assessment
- 3, 6 and 12 month follow-up interviews

TSOS PRECIS-2 Wheel



TSOS Pragmatic Trial Update

- 25 US level I trauma center sites
- 935 Patients consented/screened
- 62.5% PTSD EHR screen in rate
- 585 patients randomized
 - 372 Control
 - 213 Intervention
- Stepped wedge intervention roll-out
 - 4/4 intervention waves trained
- 75-80% 3 & 6 mo. follow-up to date
- 70-75% 12 month follow-up

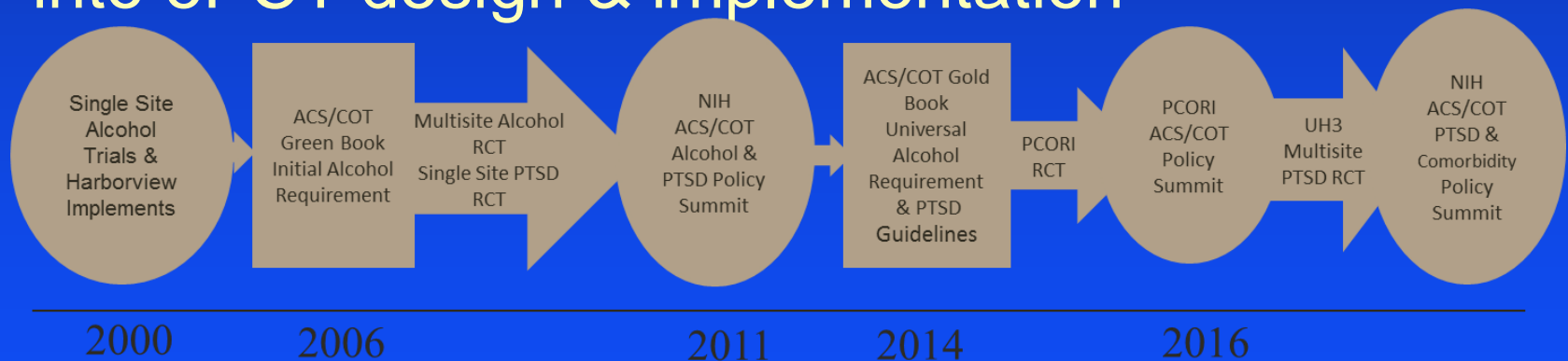
TSOS Hypotheses & Aims

- The intervention group when compared to the control group will demonstrate:
 - 1) ↓ PTSD symptoms (primary hypothesis)
 - 2) ↓ Depressive symptoms
 - 3) ↓ Suicidal ideation
 - 4) ↓ Alcohol use problems
 - 5) Improved post-injury physical function
- Regulatory policy collaboration with American College of Surgeons Committee on Trauma

TSOS Designed to Impact American College of Surgeons Policy Decisions

Historical Development: TSOS Policy Target

Two decades of orchestrated clinical trials & American College of Surgeons policy partnership builds practice change momentum into ePCT design & implementation



RESOURCES
FOR
OPTIMAL CARE
OF THE
INJURED
PATIENT
2006



COMMITTEE ON TRAUMA
AMERICAN COLLEGE OF SURGEONS

Prevention Chapter 18

“Alcohol is such a significant associated factor and contributor to injury that it is vital that level I and level II trauma centers have a mechanism to identify patients who are problem drinkers.”

“In addition, level I centers must have the capability to provide an intervention for patients identified as problem drinkers.”

SBIRT in Emergency Care Settings: Are We Ready to Take it to Scale?

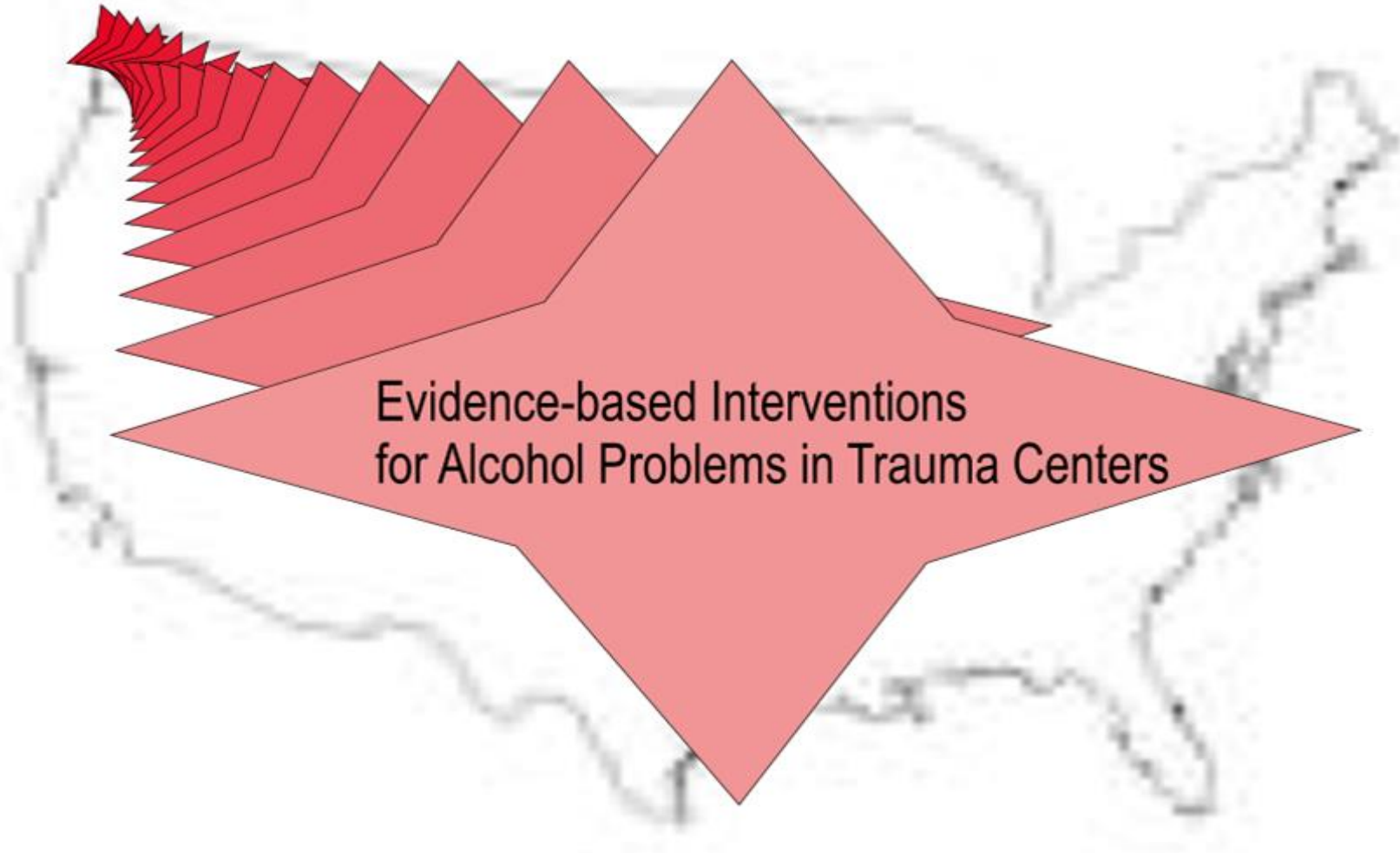
Edward Bernstein, MD, Judith A. Bernstein, RNC, PhD, Jack B. Stein, PhD, and Richard Saitz, MD, MPH

Abstract

This article summarizes a panel discussion on “SBIRT in the emergency care setting: are we ready to take it to scale?” Dr. Edward Bernstein commented on the historical developments of emergency department (ED) screening, brief intervention (BI), and referral to treatment (SBIRT) research, practice, and knowledge translation. Dr. Jack Stein addressed SBIRT grant program progress to date, the reimbursement stream, SBIRT lessons learned, and unanswered questions. Dr. Richard Saitz reviewed the limitations of the evidence for alcohol and drug ED screening and BI and cautioned on the danger of proceeding to practice and broad dissemination without evidenced based on randomized controlled trials with sufficient sample size and clinically important outcomes.

ACADEMIC EMERGENCY MEDICINE 2009; 16:1072–1077 © 2009 by the Society for Academic Emergency Medicine

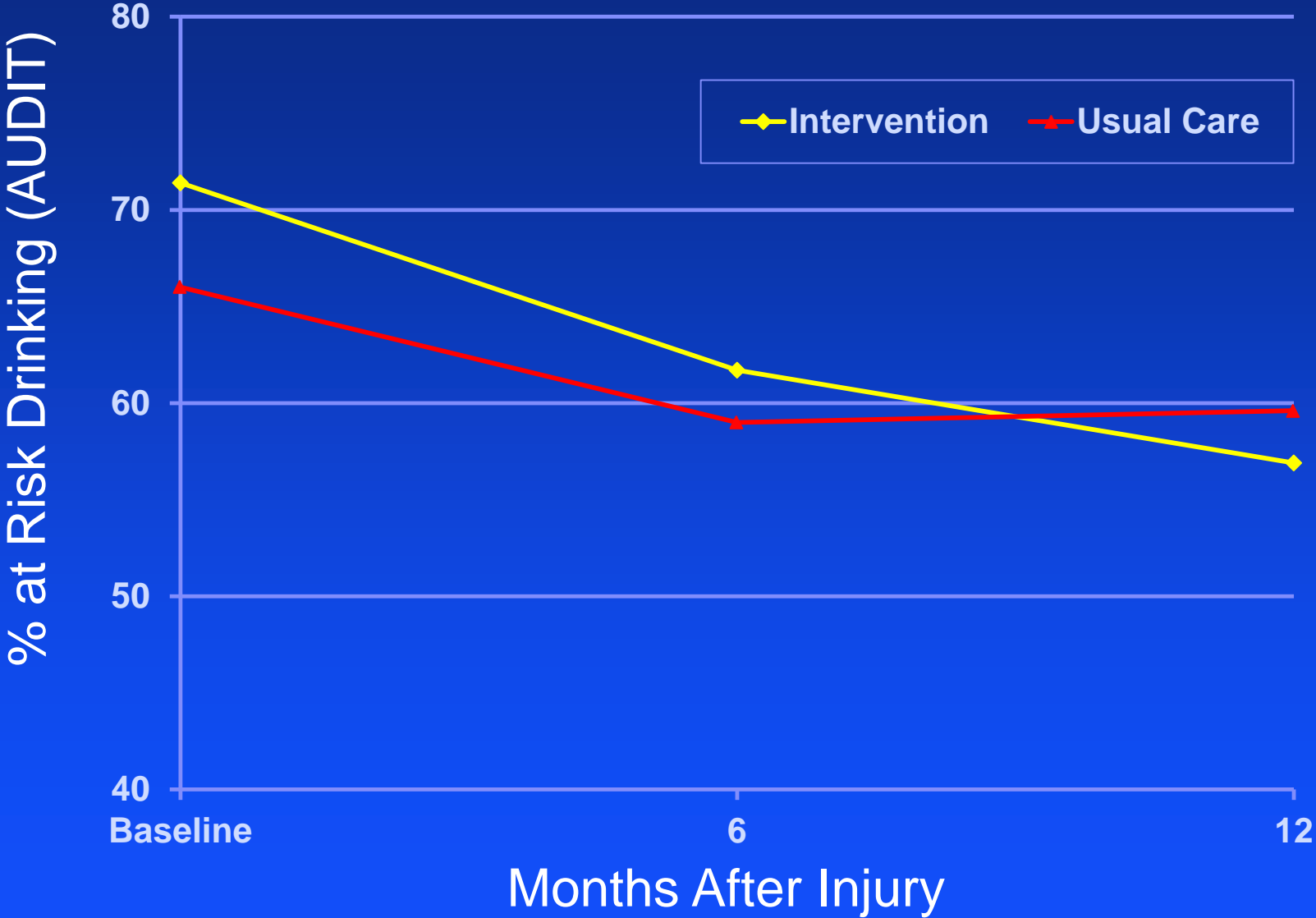
**Disseminating Organizational Screening & Brief Interventions
(DO-SBIS)**



TSOS Pragmatic Trial Progenitor: Disseminating Organizational Screening and Brief Intervention Services (DO-SBIS)

- Targets alcohol screening and intervention
- 20 US Level I Trauma Centers
- 878 patients receive baseline EHR screen
- 6 & 12 month follow-up interviews
- Parallel Group Cluster Randomized
- University of Washington IRB “Coordinates”
 - 20 site IRBs
 - Consent documents retained at sites
 - Study appointed DSMB familiar with “real world” alcohol effectiveness trials

DO-SBIS Results: All Patients (N = 878)

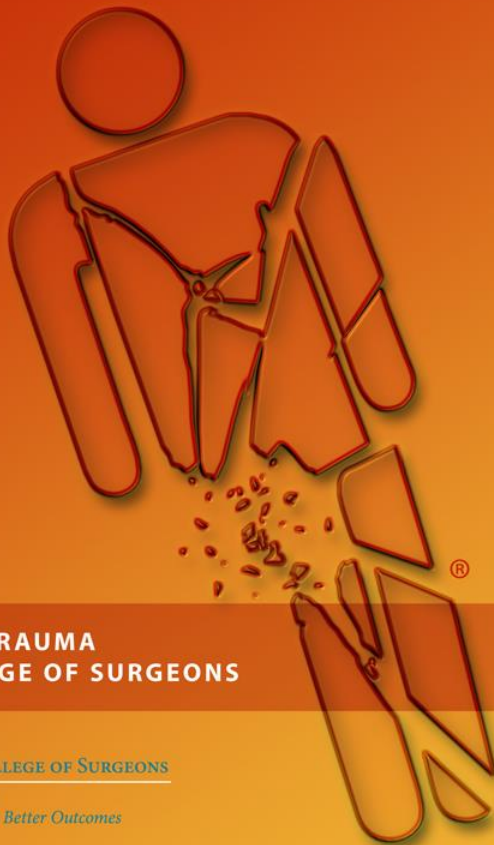


$p < 0.05$

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*Inspiring Quality:
Highest Standards, Better Outcomes*

100+ years

Alcohol Universal Screening & Intervention at Level I & II trauma centers

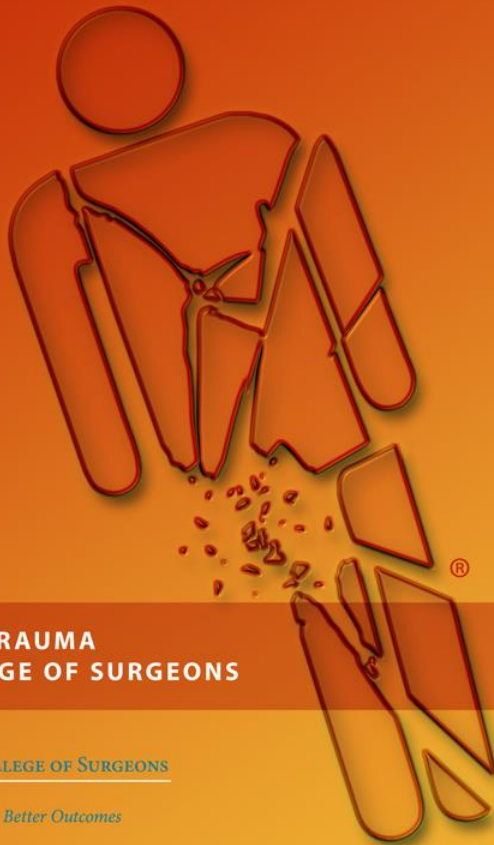
TSOS Designed to Impact American College of Surgeons Policy

- TSOS design builds from DO-SBIS

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*Inspiring Quality:
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PTSD

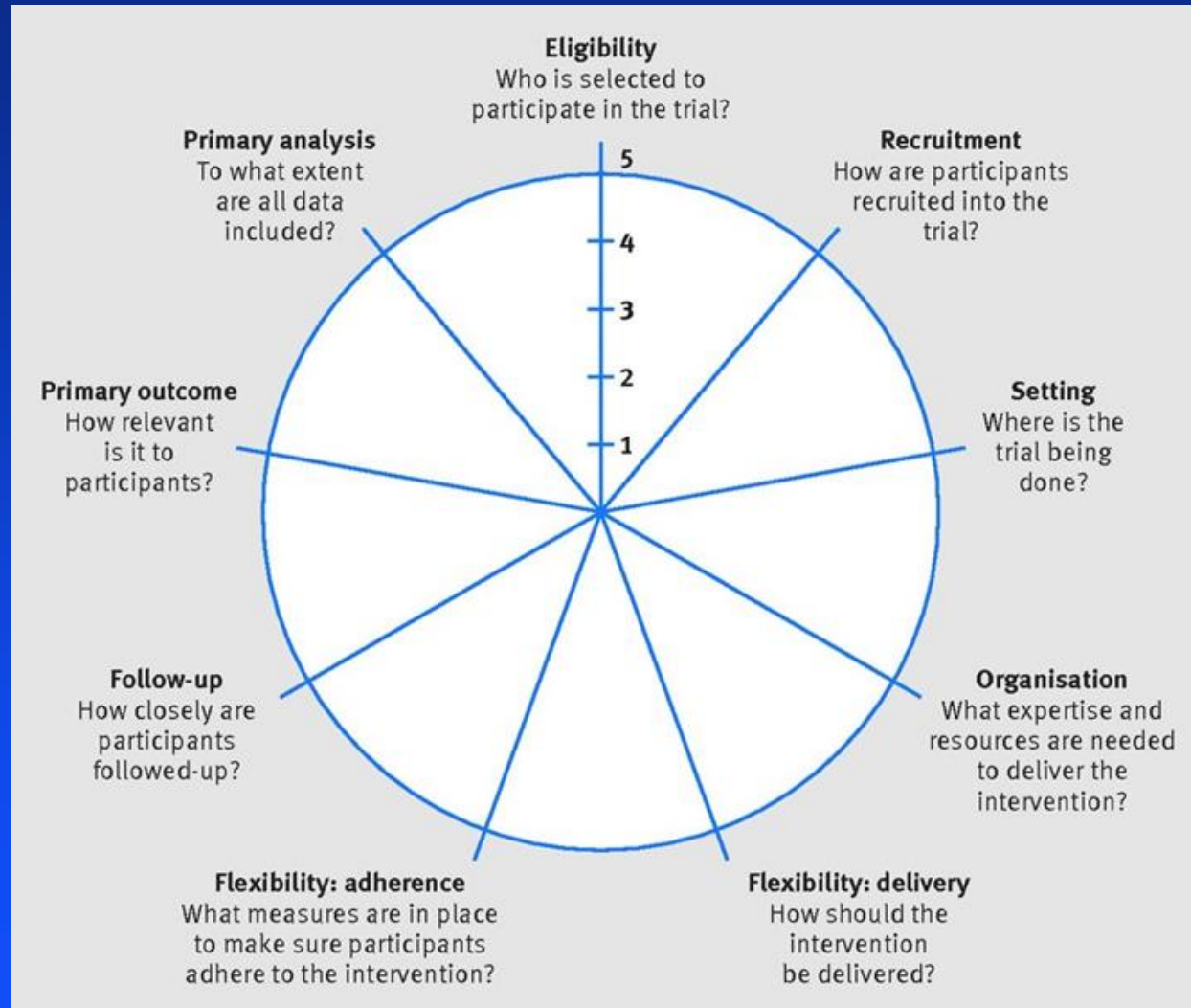
PTSD screening &
intervention best
practice guideline
recommendation

Follow-up Endpoints in ePCTs: TSOS as a Case Study

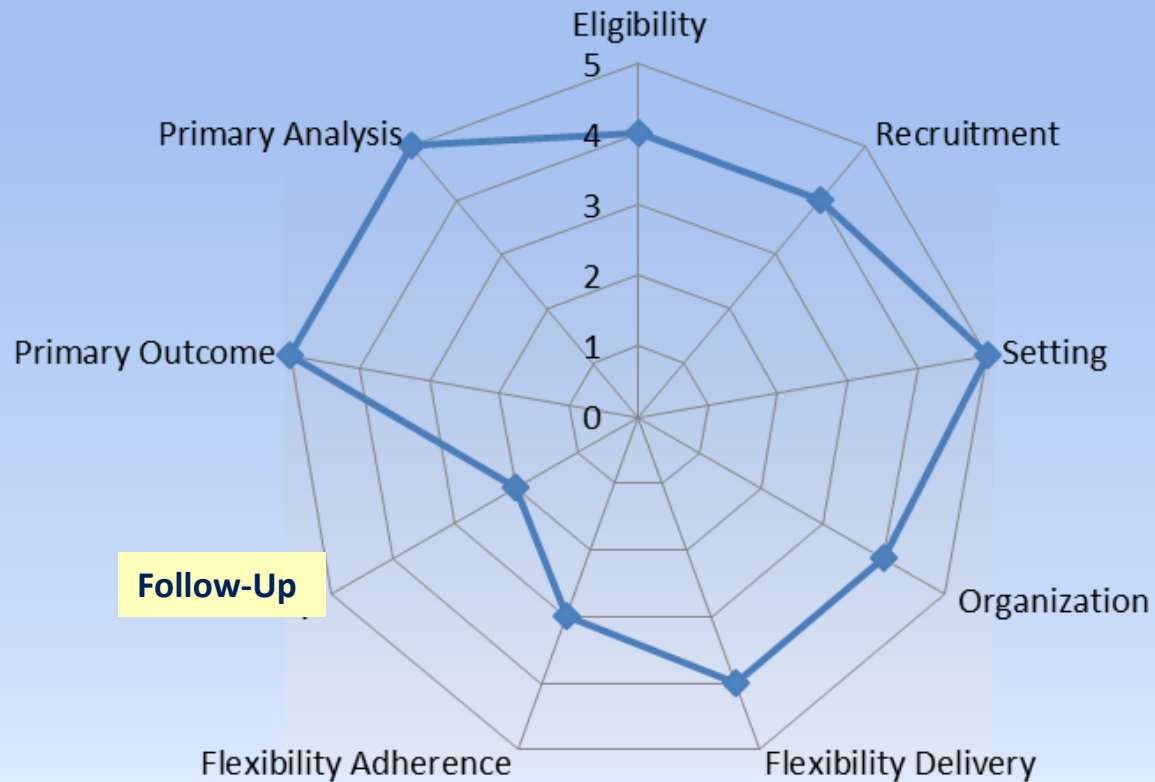
NIH Collaboratory ePCT Training: Follow-up Endpoints

Choosing an endpoint that is not captured reliably as part of routine clinical care is not pragmatic

PRECIS-2 Wheel



TSOS PRECIS-2 wheel



TSOS Study Design

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Care Transition Pragmatic Trial Follow-up Beyond Routine Visits: Comprehensive Post-Acute Stroke Services Study (COMPASS, P Duncan PI)

- PCORI pragmatic trial
- Stroke survivors in acute care hospitals in a single state
- Primary outcome: PROs
 - Stroke impact scale PRO post-discharge
 - Readmissions and mortality also tracked but unavailable in population level administrative database

Towards Population Level Administrative Data for Pragmatic Trial Care Transition Interventions: Emergency Department Information Exchanges (EDIE)

- Washington & Oregon State
- Population level ED data
- Accrues on Intent-to-treat sample
- No additional clinical follow-up required

Single Site Care Transition Pragmatic Trial Data Using EDIE: Intervention Reduces Statewide Emergency Department Utilization

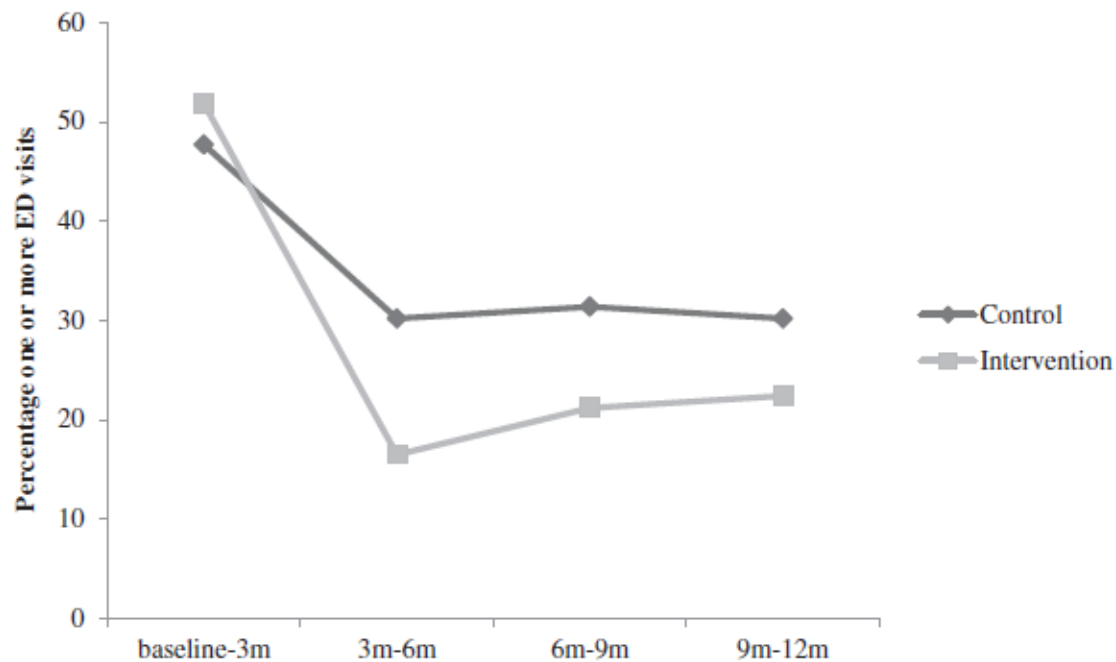


FIGURE 2. Intervention and control group emergency department visits over the course of the 12 months after injury. *Note.* $N = 171$ at all time points; ED = emergency department; m = months.

TSOS Regulatory Complexity

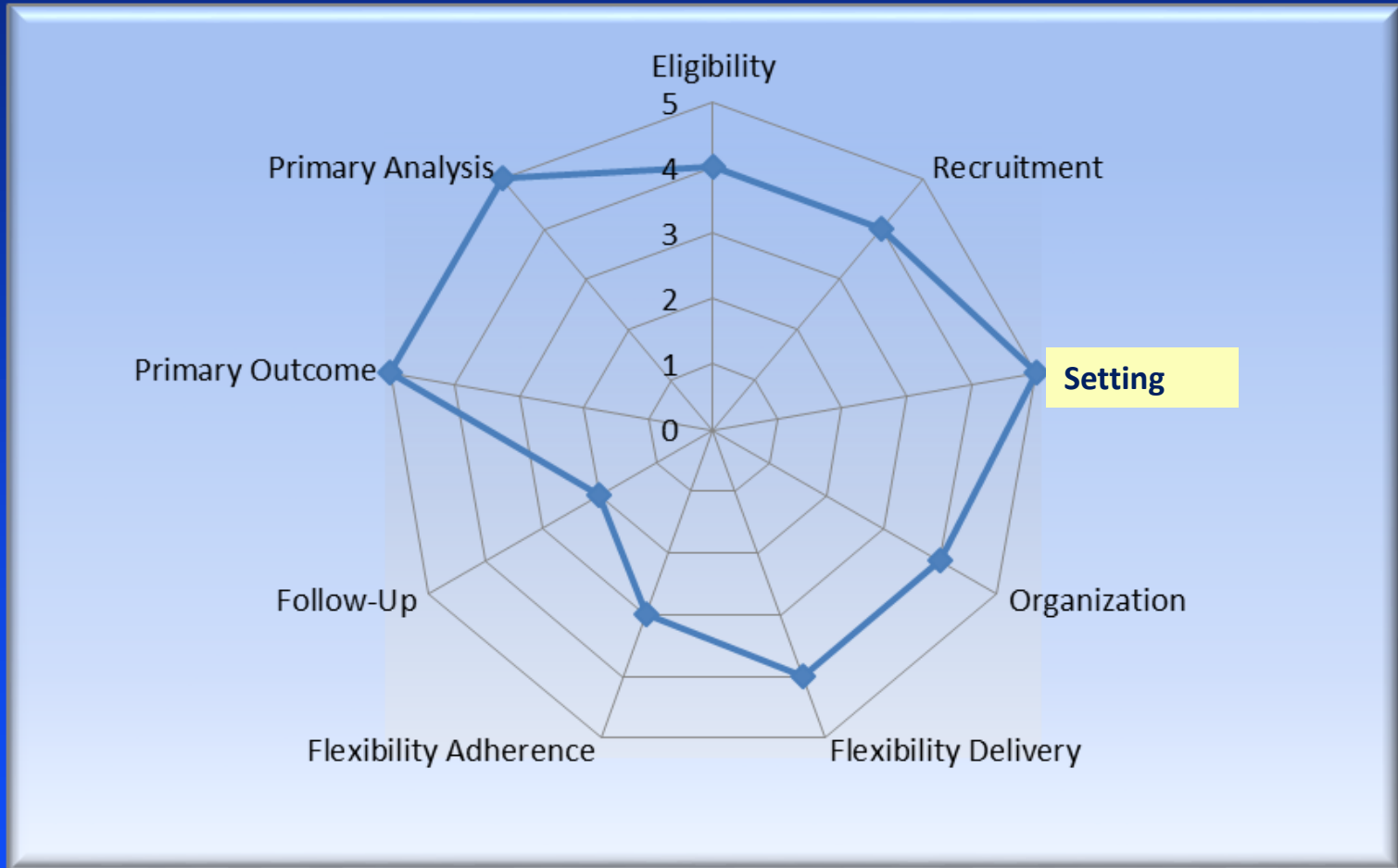
DO-SBIS Successful Implementation Informs TSOS Regulatory Approach

- UW Coordinating IRB & 20 site IRBs
- DSMB and IRB communication
- Pragmatic approach gives sites relative regulatory autonomy
- In DO-SBIS study informed consent is obtained and documentation retained at sites

TSOS Regulatory Complexity

- WIRB as centralized IRB
- 21/25 sites elect not to use WIRB
- Pragmatic approach gives sites relative regulatory autonomy
- As in DO-SBIS study informed consent is obtained and documentation retained at sites

TSOS PRECIS-2 wheel



TSOS Pragmatic Trial Regulatory Tension: Generalizable Sites vs. Regulatory Expertise

- One site undergoes internal audit
- One site undergoes voluntary recruitment suspension by TSOS team
- One site cannot account for consented patient: Consent form review begins
- Review reveals a site with major informed consent procedure difficulties
- Recruitment at all sites temporarily suspended by DSMB

TSOS Movement Towards Increasingly Intensive Site Regulatory Monitoring

- Dedicated regulatory coordinator
- Prospective review of all informed consent documentation
- Reworking of recruitment workflow to include informed consent transfer to coordinating center

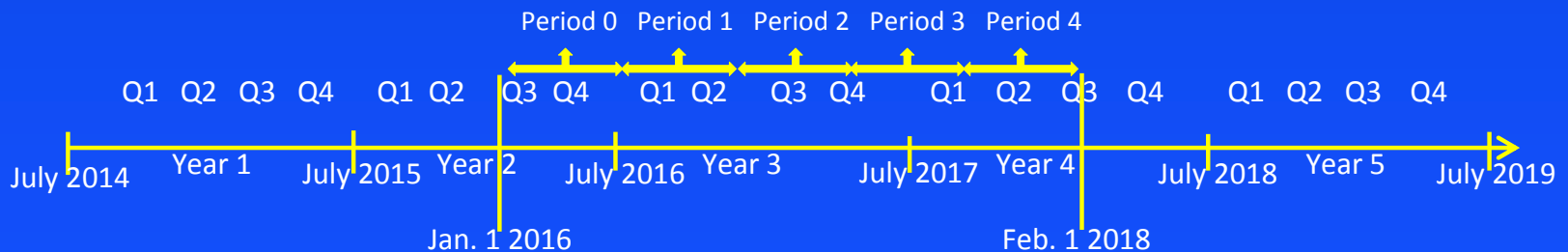
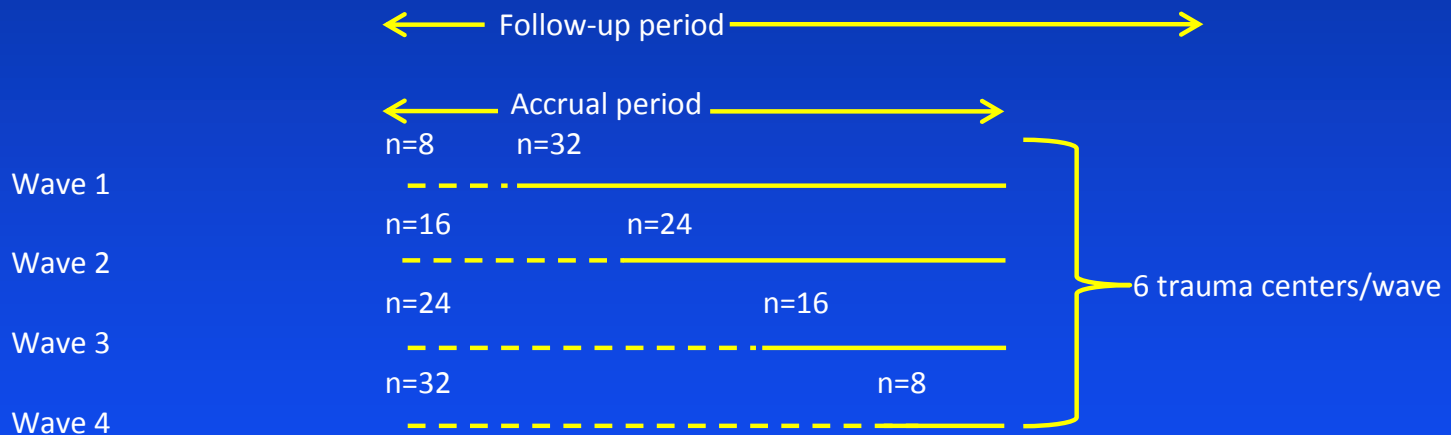
Choice of Cluster Randomized Design

Stepped Wedge Design

- Sites recruit control & intervention
- 25 sites randomized to 4 waves
- Begin with control recruitment
- Turn on intervention midway

Stepped Wedge Cluster Randomized Trial Design and Timeline

----- Unexposed to intervention (n=480 patients)
————— Exposed to intervention (n=480 patients)



Stepped Wedge Advantages

- All sites want and receive training
- Site variability in key factors mitigated as sites contribute patients to both control and intervention conditions

Stepped Wedge Disadvantages

- Control & intervention recruitment phased
- Phased roll-out limits trial flexibility particularly with regard to recruitment pauses

Summary

Summary: TSOS as an ePCT Training Case Study

- Strengths

- Real world decision targeted
- Generalizable sites, pts, providers

- Weaknesses

- Ongoing development of pragmatic follow-up assessments
- Regulatory intensity tradeoffs with site generalizability