

**NATIONAL PERINATAL INFORMATION CENTER**  
***QUALITY ANALYTIC SERVICES***  
***(NPIC/QAS)***

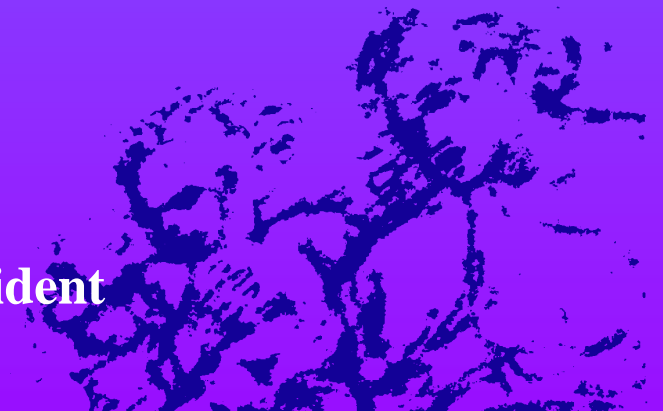
*A non-profit membership and research company  
serving the perinatal community*

**Using the Adverse Outcome Index to Measure Improvement**

**The Maryland Patient Safety Center Perinatal Collaborative:  
Learning Session 2**

June 21, 2007

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# Adverse Outcome Index

- Development
- Data Sources/Calculation
- Applications/ Initial Findings

# Background – NPIC/QAS

(Providence, Rhode Island)

- Incorporated in 1985, 501 (C) (3)
- Annual perinatal data base: 700,000 perinatal discharges ; 1.4 million total discharges
- Quarterly comparative reports
- DoD contract: 51 Military Treatment Facilities
- Joint Commission vendor: Perinatal Core Measures
- Team Performance Plus- Data Partner since 2005

# Outcome Measures

- Developed to assess quality of care in L & D units and determine whether improved team work improves clinical outcomes
- Final 10 outcome measures were selected by a panel of experts from ACOG, AWHONN, SOAP, AFIP, Navy BUMed, Tricare Management Activity, study hospitals
- ACOG Patient Safety provided severity weighting

# Adverse Outcomes

<b>Measure</b>	<b>Weight</b>
Maternal Death	750
Intrapartum and Neonatal Death	400
Uterine Rupture	100
Maternal Admission to ICU	65
Birth Trauma	60
Return to OR/L&D	40
Admission to NICU	35
APGAR <7	25
Blood Transfusions	20
3 <sup>rd</sup> and 4 <sup>th</sup> degree perineal laceration	5

# Three Indices

- I. **Adverse Outcome Index (AOI)** - # patients with one or more adverse outcomes / total number of deliveries
- II. **Weighted Adverse Outcome Score (WAOS)**- total weighted adverse outcome score/ total number of deliveries
- III. **Severity Index (SI)** – total weighted adverse outcome score/ # of patients with an adverse outcome

# Data Sources - Core Data Set

- Administrative data set: Health Services Cost Review Commission (HSCRC) or DC Hospital Association discharge data set
- Clinical and financial data
- Patient specific
- All mothers and neonates 0-28 days old at admission

# Supplemental data set: perinatal variables

- Neonatal APGAR 5
- Gestational Age
- Maternal Blood Transfusions if not coded
- MRN, admit date and discharge date for linking to core data set

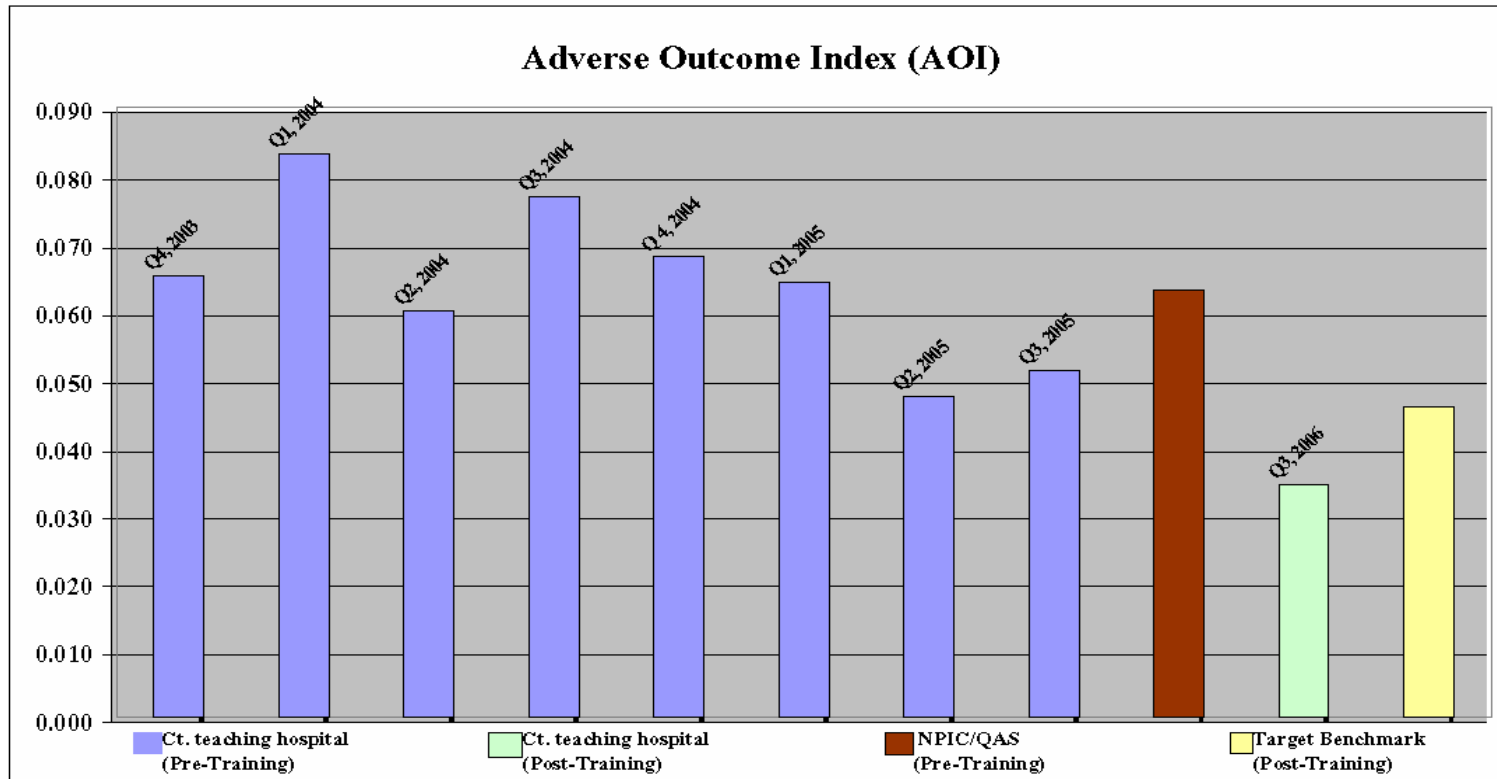
# Reports

- Baseline - 1 year pre- training (1/1/06 – 12/31/06)
- Post-training - two quarters (10/1/07 – 3/31/08)
- Event counts by quarter
- Calculation of indices
- Each hospital compared to a pre-training benchmark and post-training target

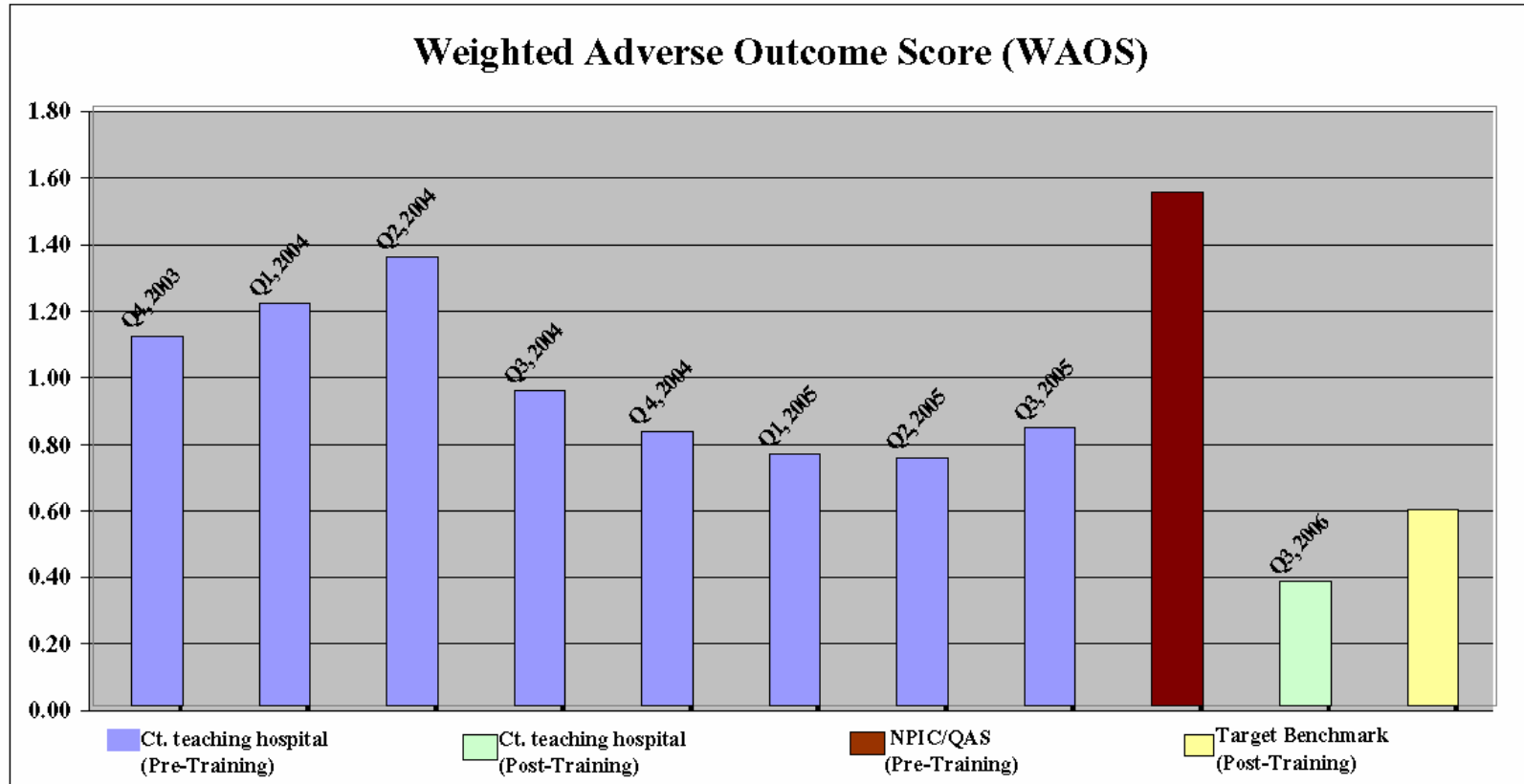
# Results for BIDMC

- AOI decreased 35.9 % between 2000 and 2005
- WAOS decreased 96.1%
- SI decreased 38.9 %
- Indemnity experience: claims, suits and observations dropped from 33 to 16
- March, 2007 awarded first BC/BS of MA Health Care Excellence Award for their groundbreaking approach to reducing medical errors in obstetrics

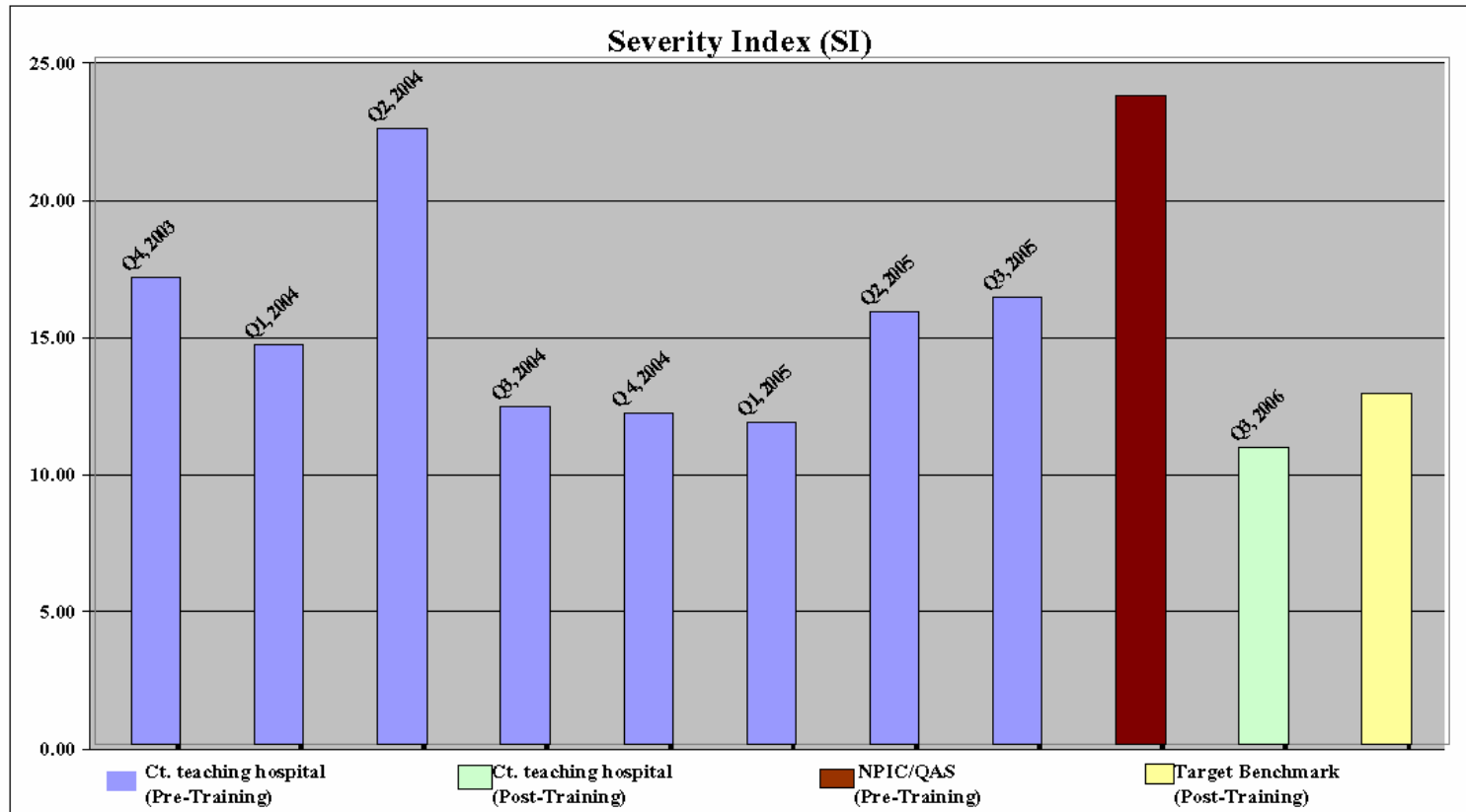
# Teaching Hospital



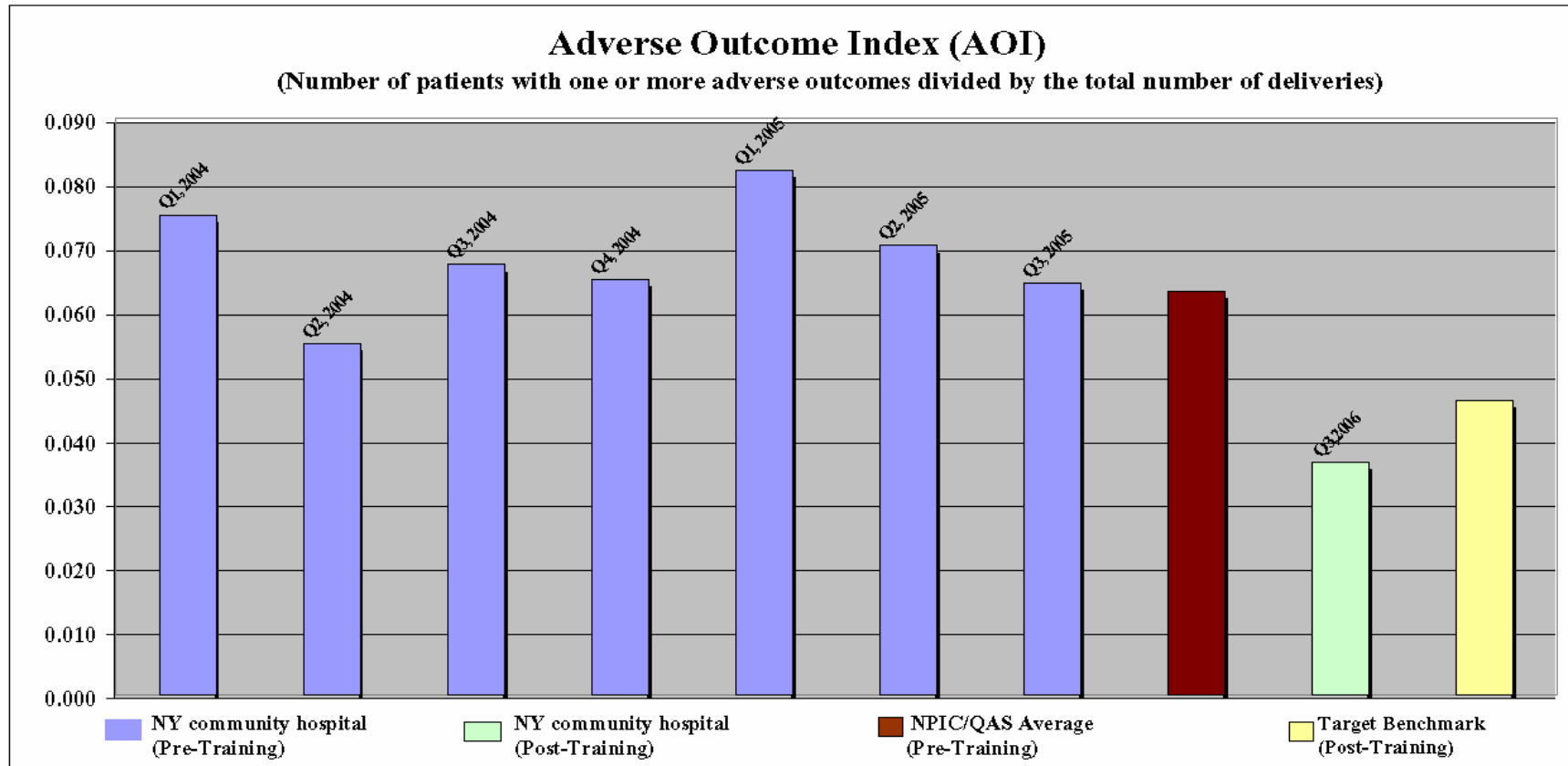
# Teaching Hospital



# Teaching Hospital



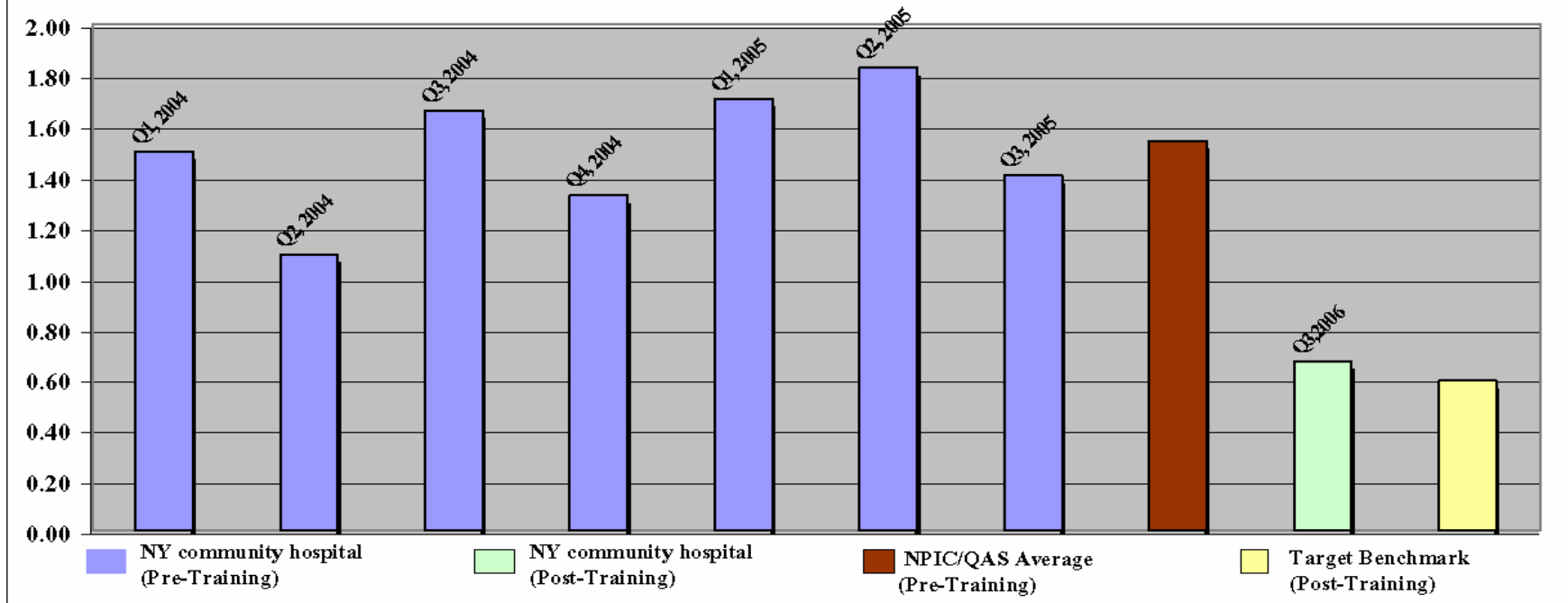
# Community Hospital



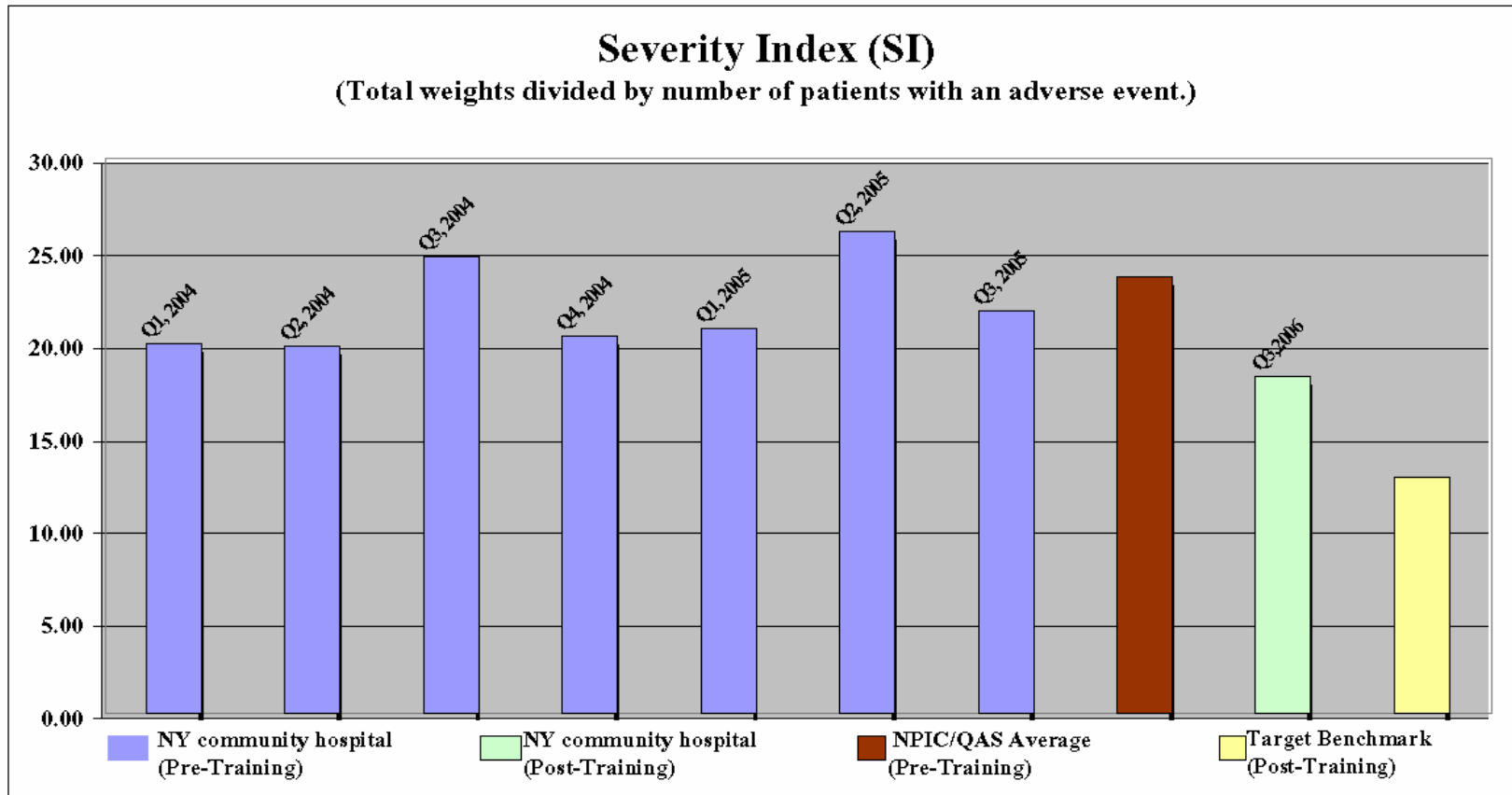
# Community Hospital

## Weighted Adverse Outcome Score (WAOS)

(All adverse events times severity weight divided by total number of deliveries.)



# Community Hospital



# Measuring Improvement Using the AOI

- One set of metrics
- Vetted by an expert panel
- Use of administrative data sets with supplemental files is efficient and cost effective
- Allows for a baseline profile that is credible
- Easily modified and updated