

# Behavior-Based Safety

## Presentation

## Human Factors Conference

Houston, TX

April 8th - 11th

2002





# 3 Types of At risk

- **Enabled** = within persons control - conditions and systems support
- **Difficult** = can be done but takes extra effort
- **Non-enabled** = not within persons control

# Behavioral Science Technology, Inc.

The behavior-based performance improvement engine

Production  
quality

Customer  
service

Behavior-based  
Performance  
improvement

Error  
reduction

Spill  
prevention

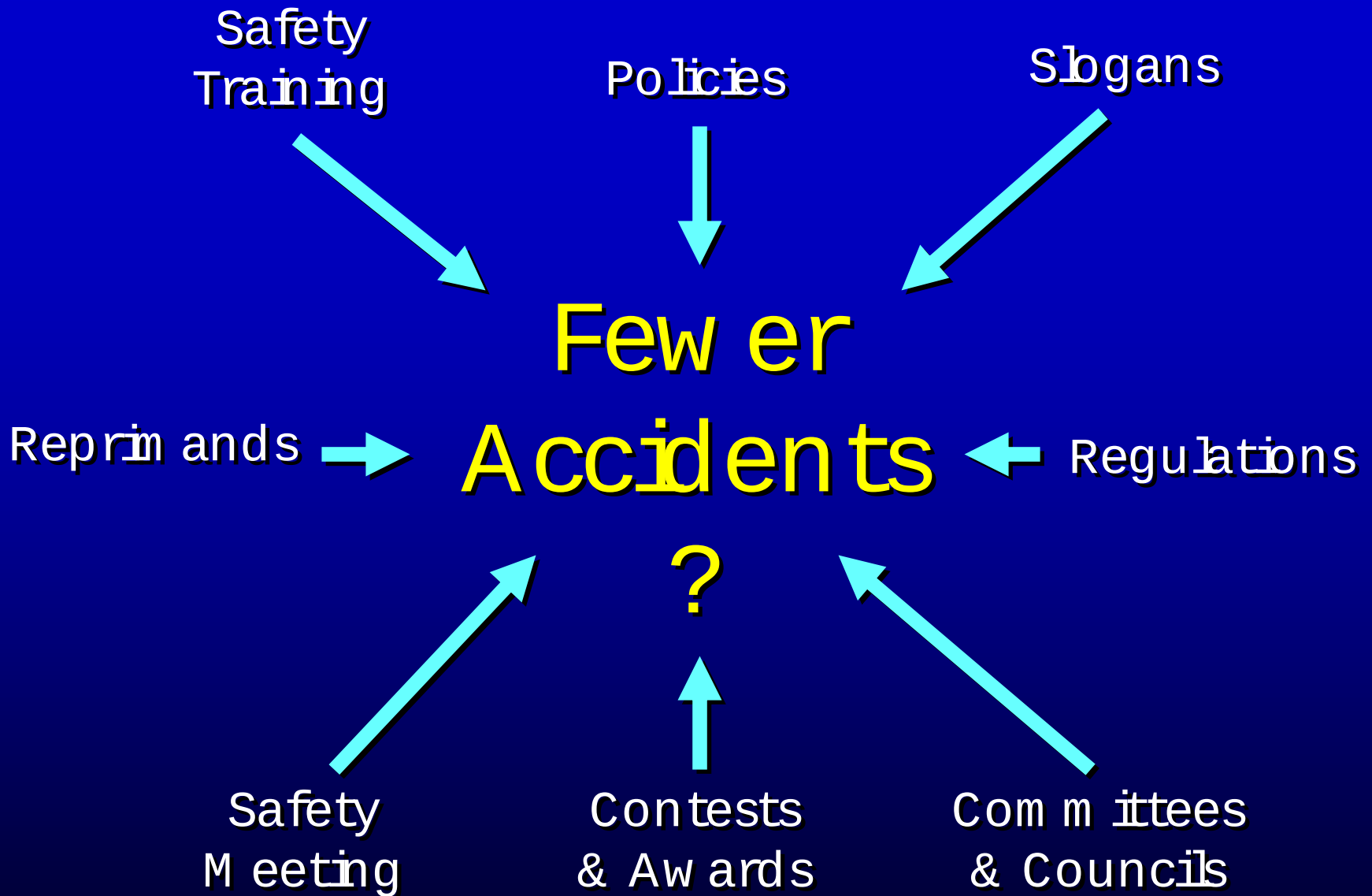
Safety

# Primary Concepts

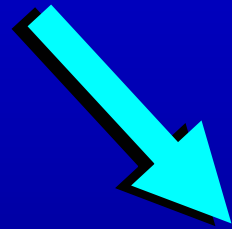
- Process not Program
- Adaptation vs adoption
- Employee Involvement
- Don't blame employees
- Parallels with quality
- Develop internal resources for implementation
- Objective: Continuous Improvement
- Mgmt & workforce must understand and buy-in

# **Barriers To Continuous Safety Improvement**

- **Hazard recognition and response**
- **Business systems**
- **Rewards/recognition**
- **Facility and equipment**
- **Disagreement on safe practices**
- **Personal factors**
- **Culture**
- **Personal choice**



Safety Activities



Fewer  
At-Risk Behaviors



Fewer Accidents



# Behavior

An  
Observable  
Act



# ABC Analysis

## Antecedents

Anything which precedes and sets the stage for Behavior

## Behavior

An observable act

## Consequences

Anything which directly follows from the Behavior

# Understanding System Influences

## ABC Analysis

### Antecedents

Goggles don't fit

Goggles are in poor condition

### Behavior

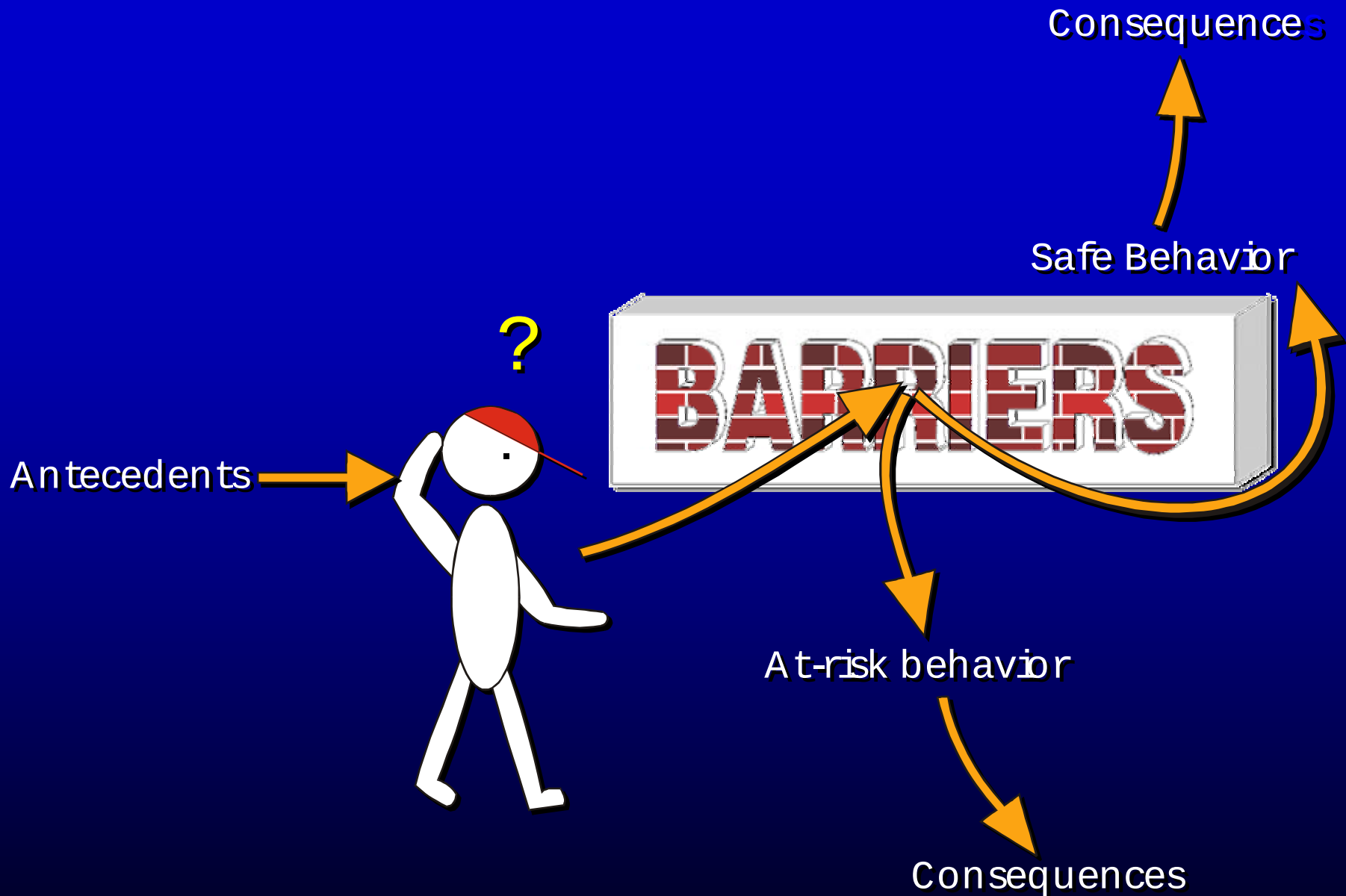
Worker fails to wear goggles when grinding

### Consequences

Comfort

Better Vision

Exposure to Injury



# **The CBI<sup>®</sup> Tools**

- **List of behaviors that have caused accidents**
- **Extracted from accident data**
- **Steering committee adds others based on their knowledge of workplace behavior**

# Part One — CBI® Data Sheet

## Critical elements

- **No names / no discipline**
- **Behaviors grouped into categories**
- **Selected variables used for sorting data**
- **Comment section**

# **Part Two — CBI® Definitions**

- **Establishes in observable terms a consistent measurement of workplace behavior**
- **Ensures consistency between observers and observations**
- **Definitions are not a rewrite of rules and regulations**

# Example Definition

## 4.1 Line of Fire:

Is the person positioning self to avoid getting contacted, sprayed, overexposed, struck or hit by something if it lets go, gives way, releases or falls?

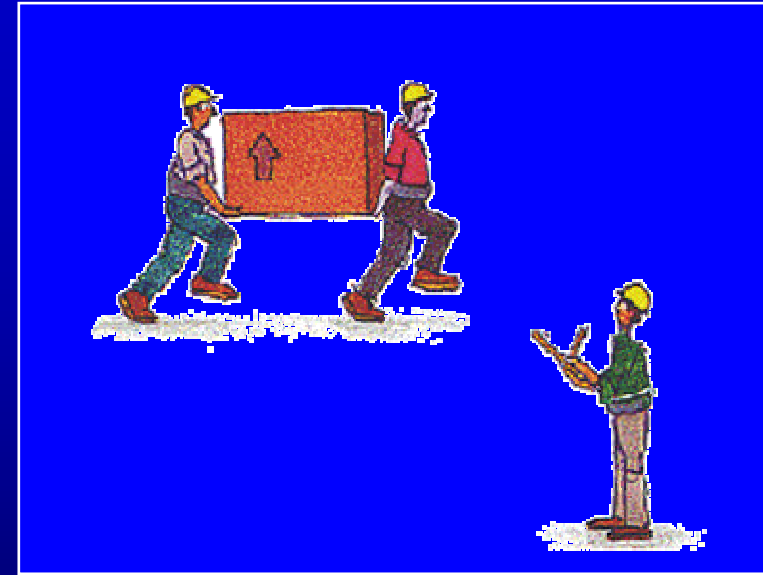
### For Example —

1. Is person avoiding standing under suspended load?
2. Is person standing out of path of flying debris?
3. When breaking flange does the person break nuts farthest away first?
4. Does person avoid looking into pipe being rodged out?

# 0 b servers

TO START: Train a Core Group  
of Hourly Workforce

GOAL: 100% of Site  
Population Trained



## Typical Frequency of Observation

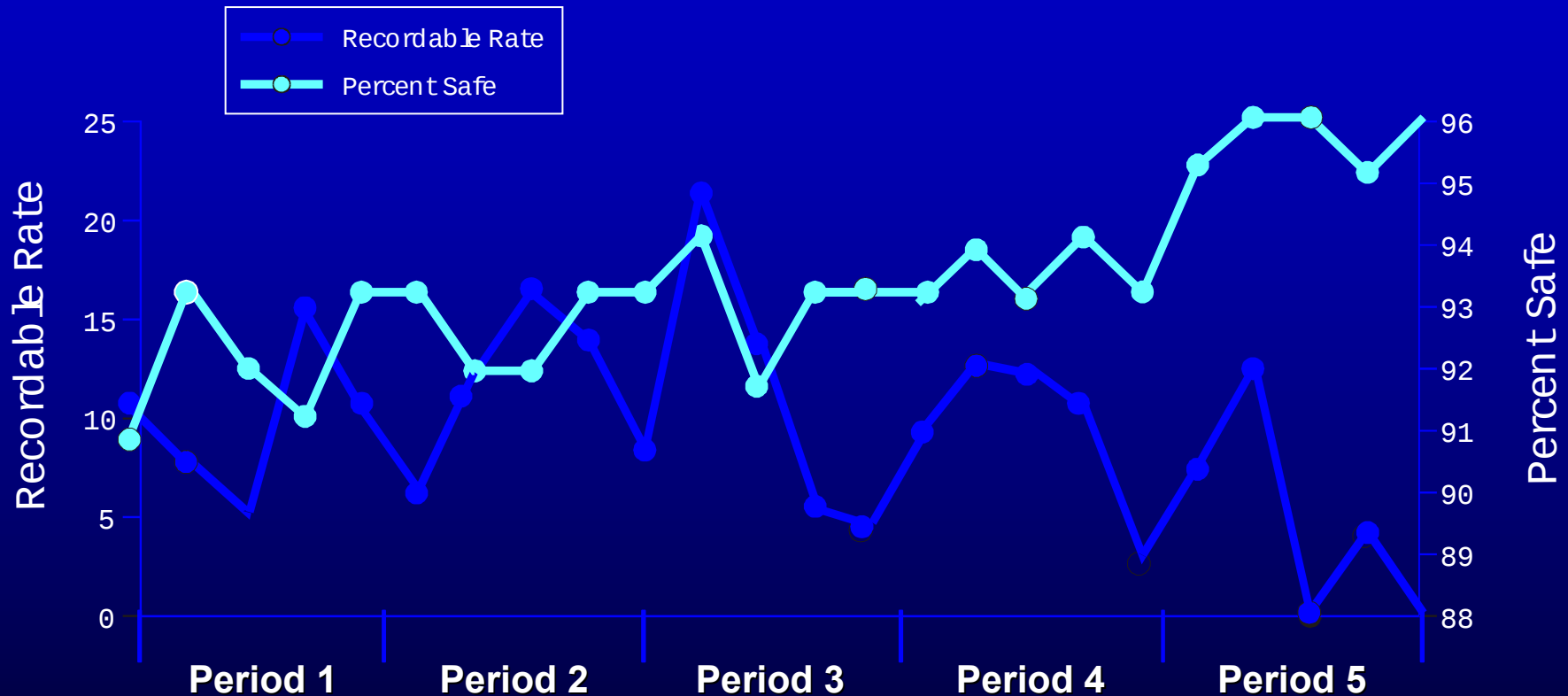
TO START: 2 per week Per Observer

DURATION: 5 – 30 Minutes



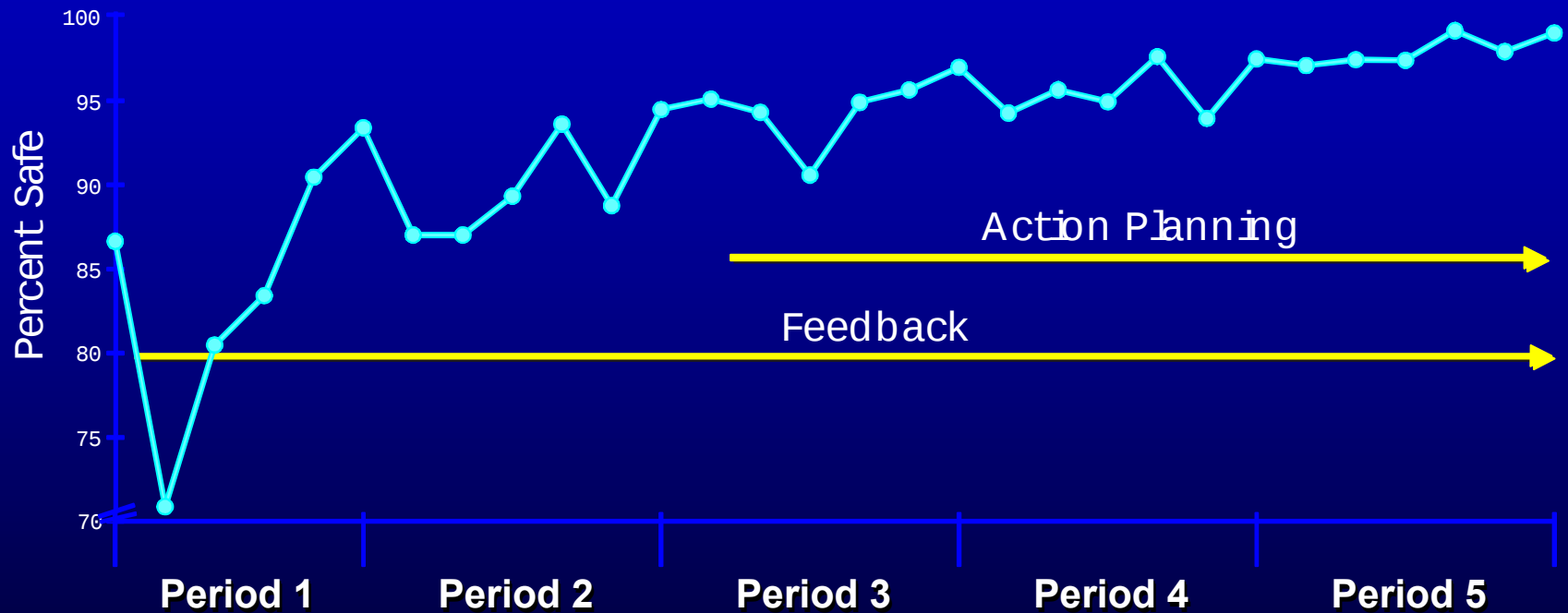
Analyze Data /Select Focus /Develop Action Plan

# As Safe Behavior Increases, Recordable Rates Decrease



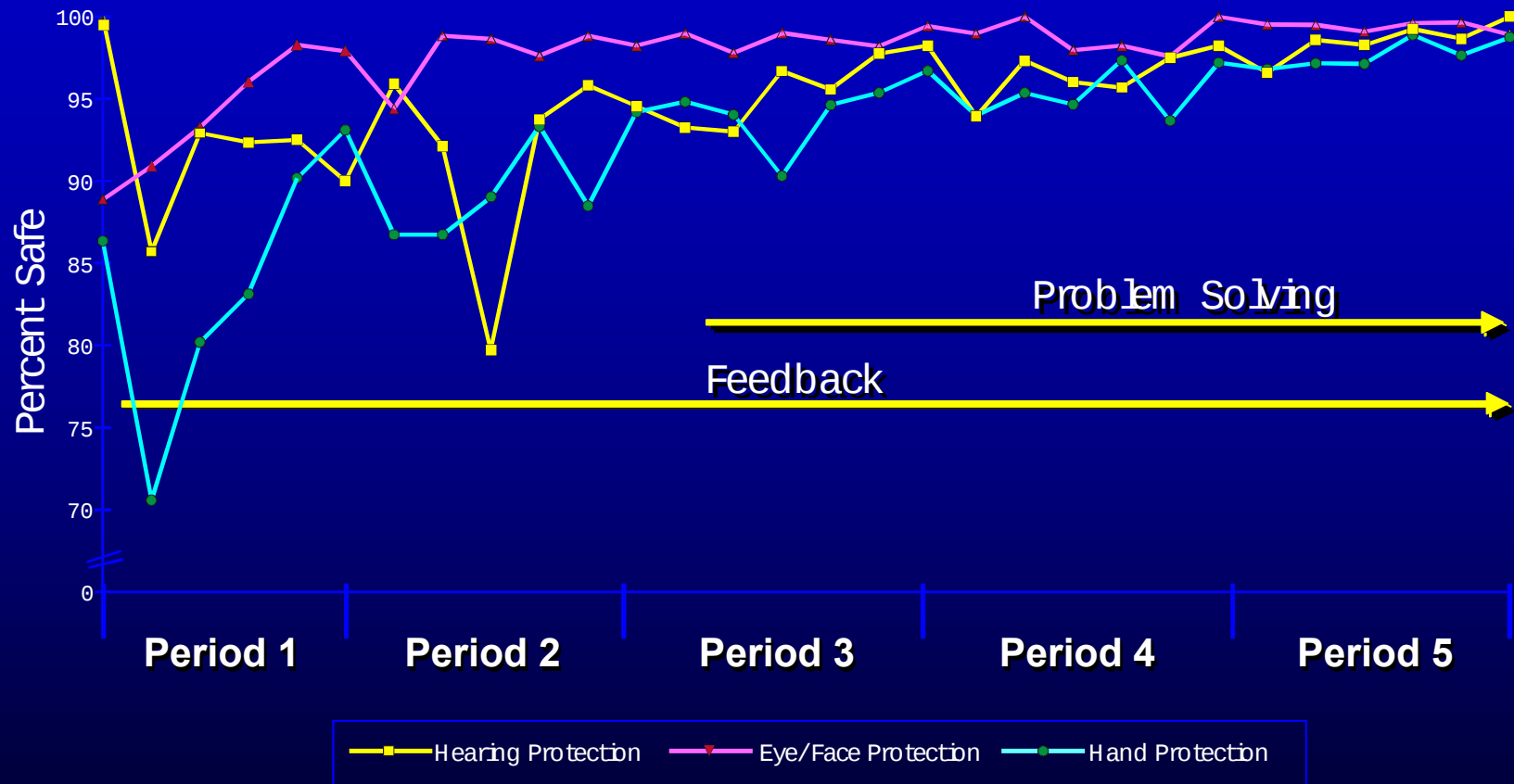
# Hand Protection

Increased from 80% Safe to 98% Safe



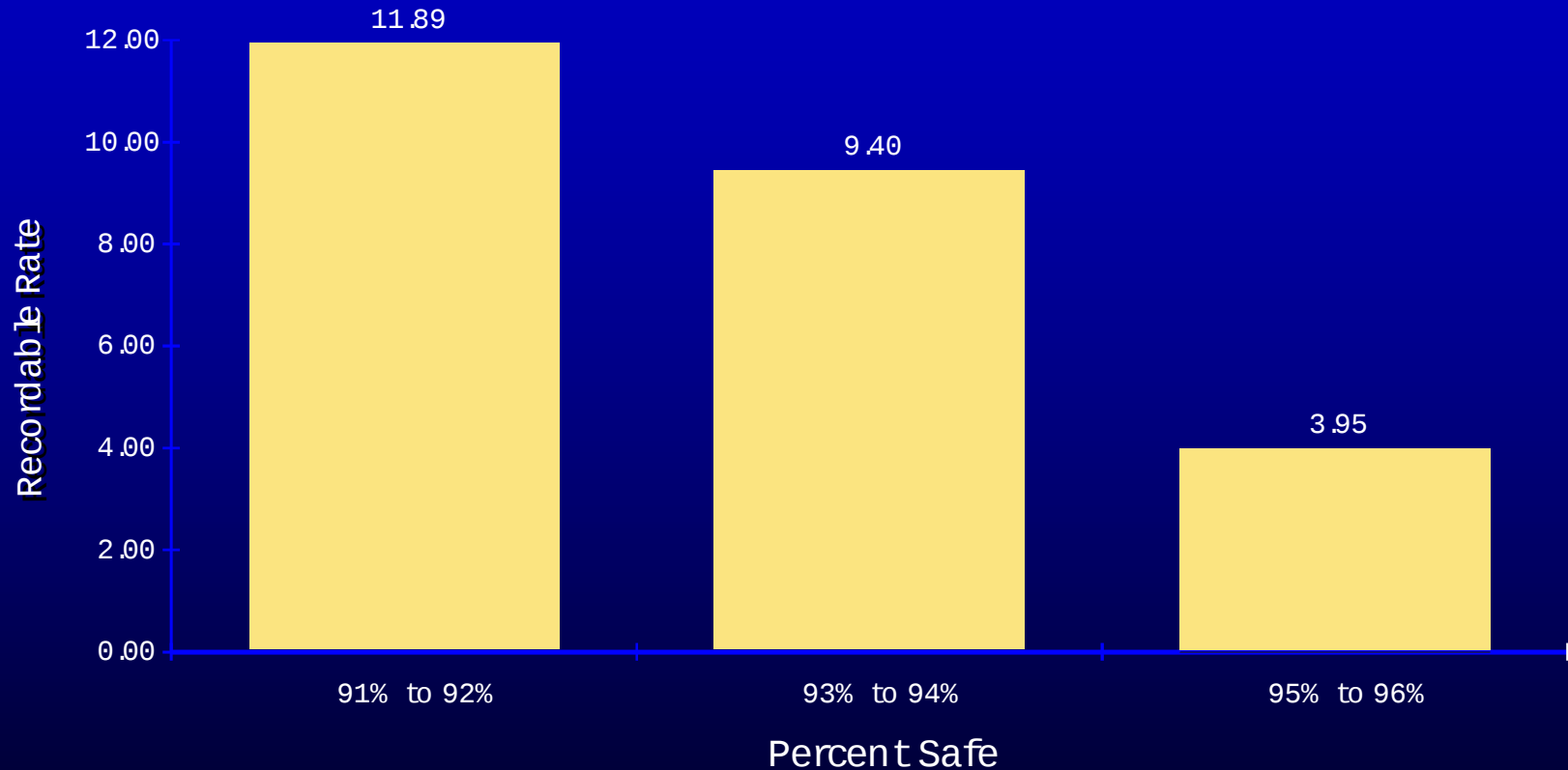
# Industrial Hygiene Behaviors

## Increases in Percent Safe over Time

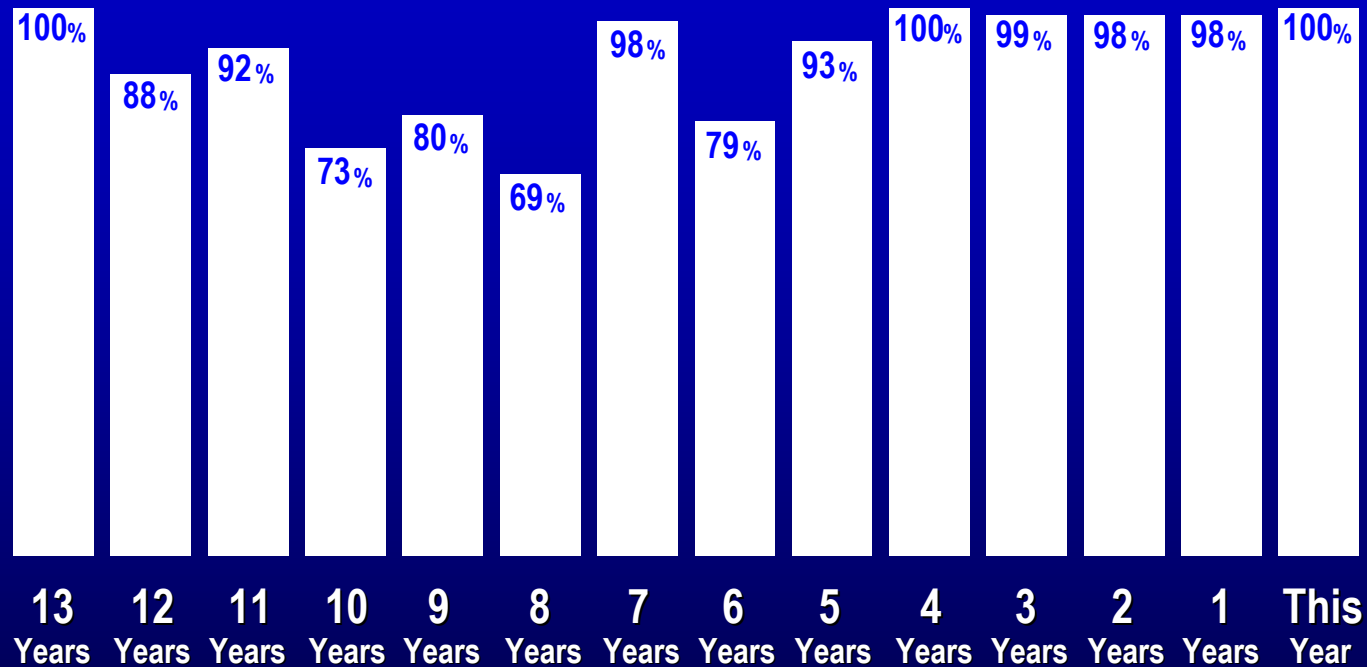


# Lum ber M ill

High Percent Safe Scores are Associated w ith  
Low Recordable Rates



# Sustainability of Implementations



**Percentage Still Using Their Processes**

# BAPP<sup>®</sup> Technology Process Flow Chart

