

# Multiple Measures in the Context of Performance-Based Accountability

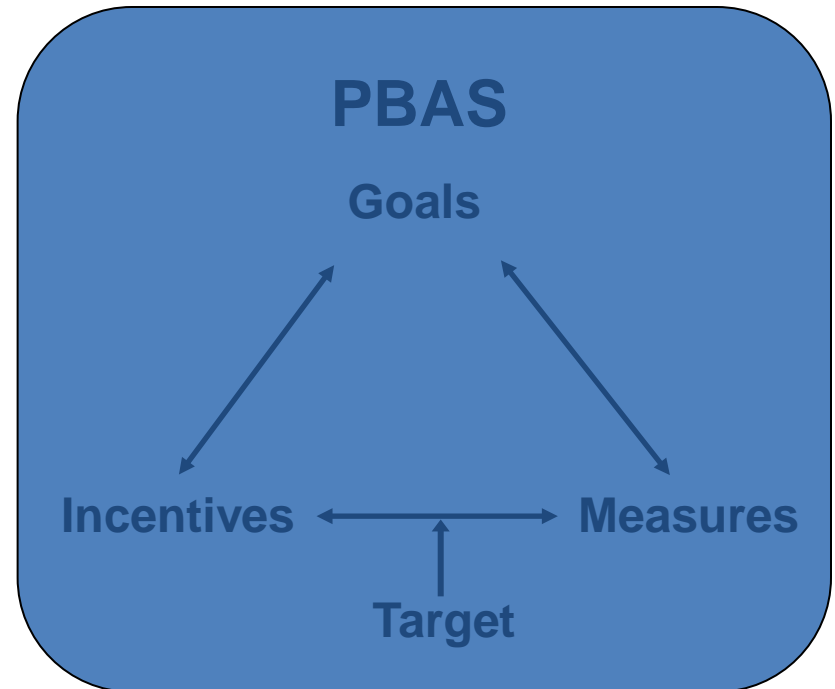
Brian Stecher

Reidy Interactive Lecture Series

September 23, 2011

# Performance-Based Accountability

- Link incentives with measured performance to improve the attainment of goals
- Key elements of PBA systems:
  - Consensus on goals
  - Measures
  - Target structure
  - Incentives
- Multiple measures might improve the performance of the system



# No Child Left Behind

## Incentives

Identification  
Corrective  
Action  
Restructuring

= f

## Measures

Performance level on  
mathematics test

Performance level  
on reading test

Graduation rate  
Attendance rate

Test-taking rate

## Target Structure

Increasing targets to  
100% (AMO) by  
subgroup

Local targets

Fixed target (95%)

Parent reporting

Highly qualified teacher

# Twenty States Currently Report Measures Beyond NCLB

- Outcome indicators included in ratings
  - Additional tested subjects (e.g., history, social studies)
  - College readiness (e.g., ACT, AP)
  - Growth in performance
  - Weighted test scores along whole performance range
- Additional indicators
  - Safe and Supportive Environment
  - Students at-risk of failure
  - Interim assessments/advanced course-taking

# Multiple Measures and PBA

- PBA Theory of Action: Measured performance related to endorsed goals triggers incentives that shape behavior thus promoting goals
- How might multiple measures contribute?
  - More accurate information improves the signal
  - More complete information aligns better with goals
  - More robust information reduces corruption
  - More sensitive targeting heightens responsiveness

# Multiple Measures: More Accurate Information



# Multiple Measures: More Accurate Information (2)

NEW YORK STATE ATHLETIC COMMISSION  
**JUDGES SCORE CARD**  
 DATE DEC 5 1947  
 CLUB 20<sup>th</sup> CENTURY SC INC  
 NAME J. LOUIS NAME J. WALCOTT

WINNER OF ROUND	CLEAN EFFECTIVE PUNCHES	KNOW GENERALSHIP	AGGRESSIVENESS	DEFENSE	POINTS	15 ROUNDS	POINTS	DEFENSE	AGGRESSIVENESS	KNOW GENERALSHIP	CLEAN EFFECTIVE PUNCHES	WINNER OF ROUND
L					1	3						W
L					2	2						W
XV				1	3							L
L					4	3						W
W				1	5							L
W				1	6							L
W				1	7							L
L					8	2						W
L					9	1						W
E					10							E
XV				1	11							L
L					12	1						W
W				1	13							L
W				2	14							L
W				1	15							L

REMARKS—  
8 9 11 2 6  
 SIGNATURE: *[Signature]*

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L					0	1	3	✓			✓	W
L					0	2	2	✓			✓	W
W	✓				2	3	0					L
L					0	4	3	✓			✓	W
E					0	5	0					E
W	✓				2	6	0					L
L					0	7	1	✓			✓	W
E					0	8	2				✓	W
W	✓				2	10	0				✓	L
L					0	11	2				✓	W
W	✓				2	13	0				✓	L
W	✓				2	14	0				✓	L
W					2	15	0				✓	L

REMARKS—  
6 W 1<sup>st</sup> E 2<sup>nd</sup> W 7  
KNOCK DOWN - (1<sup>st</sup> ROUND  
KNOCK DOWN - (4<sup>th</sup> ROUND)  
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L	✓				0	1	3	✓			✓	W
L	✓				0	2	1	✓			✓	W
W	✓				2	3	0				✓	L
L	✓				0	4	3	✓			✓	W
W	✓				1	5	0				✓	L
W	✓				1	6	0				✓	L
W	✓				1	7	0				✓	L
W	✓				1	8	0				✓	L
H	✓				0	9	1	✓			✓	W
W	✓				1	10	0				✓	L
W	✓				1	11	0				✓	L
L	✓				0	12	1	✓			✓	W
L	✓				0	13	1	✓			✓	W
W	✓				2	14	0				✓	L
W	✓				1	15	0				✓	L

REMARKS—  
9 - 11 10 - 6  
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# Multiple Measures: More Complete Information

Omni Parker House


 60 SCHOOL STREET Boston, MA 02108  
Boston: Downtown & Waterfront

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**100%** customers recommend this product.



# Multiple Measures: More Complete Information

## [Omni Parker House](#) ★★★★★

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# More Complete Information: Society Has Diverse Goals for Education

- Academic Skills
- Practical and Fine Arts
- Health and Nutrition
- Social Skills
- Psychological Skills
- Citizenship

# More Complete Information: Many Ways to Measure These Diverse Goals

- Academic skills
- Practical and Fine Arts
- Health and Nutrition
- Social Skills
- Psychological Skills
- Citizenship
- Tests
- Performances
- Access & Participation
- Stakeholder Surveys
- Direct Observation
- Administrative Records
- Post-Secondary Data

# Multiple Measures: More Robust Information

- Campbell's Law
  - The more any quantitative [social indicator](#) is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social processes it is intended to monitor.
  - In the context of high stakes testing this leads to score inflation
- Multiple indicators diffuse the pressure of accountability on indicators.



# Multiple Measures: More Sensitive Targeting

## School Content Area Weights for the Most Common Grade Spans, K–8

Content Area	2010–11 API Test Weights		
	K–5	6–8	K–8
CST/CMA/CAPA in ELA	56.5%	51.4%	54.2%
CST/CMA/CAPA in Mathematics	37.6%	34.3%	36.1%
CST/CMA/CAPA in Science, Grades 5 and 8	5.9%	7.1%	6.5%
CST in History–Social Science, Grade 8	--	7.1%	3.2%

## School Content Area Weights for Grades 9–12

Content Area	2010–11 API Test Weights
	9–12
CST/CMA/CAPA in ELA, Grades 9–11	27.1%
CST/CMA/CAPA in Mathematics, Grades 9–11	18.1%
CST/CMA/CAPA in Science, Grades 9–11	22.9%
CST in History–Social Science, Grades 9–11	13.9%
CAHSEE ELA, Grades 10–12	9.0%
CAHSEE Mathematics, Grades 10–12	9.0%

# Challenge:

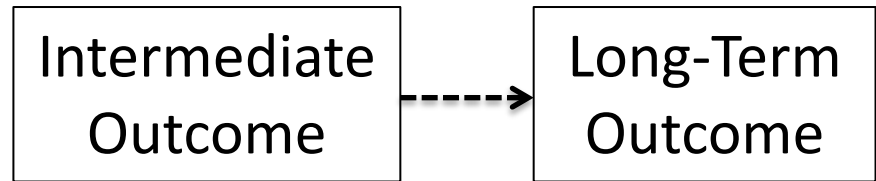
# Measuring Performance that Matters

Long-Term  
Outcome

- College Success
- Career Success
- Healthy Living
- Citizenship

# Challenge:

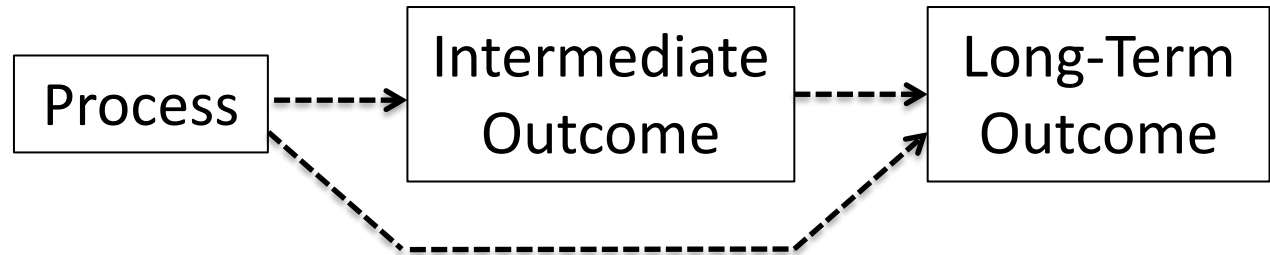
## Measuring Performance that Matters



- College Readiness
- Career Readiness
- Course-Taking
- Athletic Participation
- Student Government

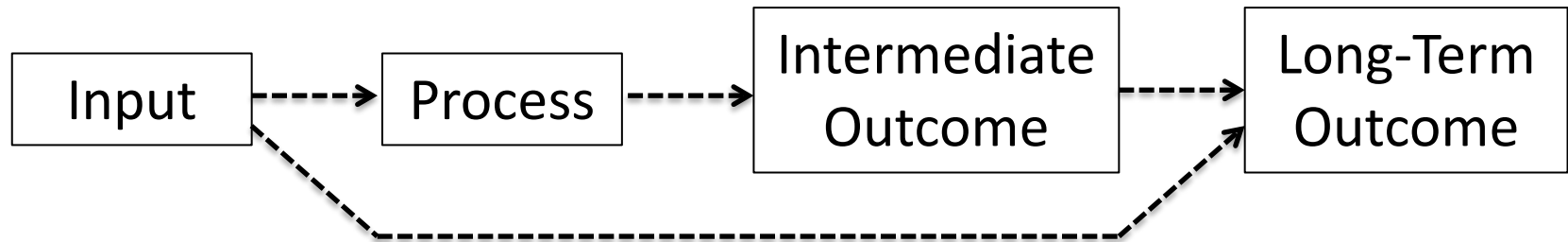


# Challenge: Measuring Performance that Matters



- AP Course Offering
- College Counseling
- Art/Music Courses
- Model UN

# Challenge: Measuring Performance that Matters



- Qualified Teachers
- Art/Music Facilities
- Community Partners

# Challenge:

## Balancing Benefits and Costs/Risks

- Breadth ↔ Focus
- Complexity ↔ Transparency
- Comprehensiveness ↔ Affordability
- Uniformity ↔ Flexibility
- Formative ↔ Summative Purposes
- Signaling ↔ Preventing Corruption

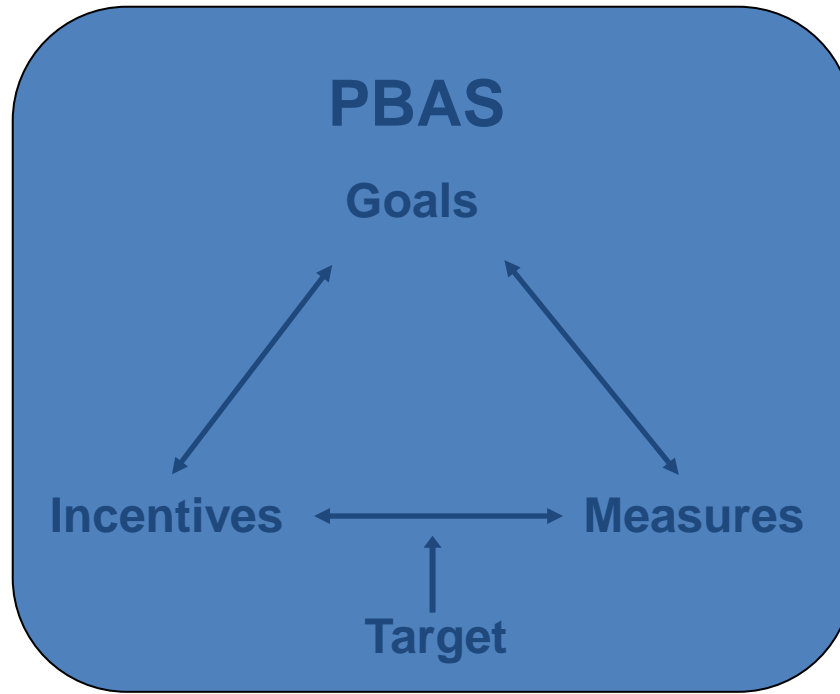
# PBAS

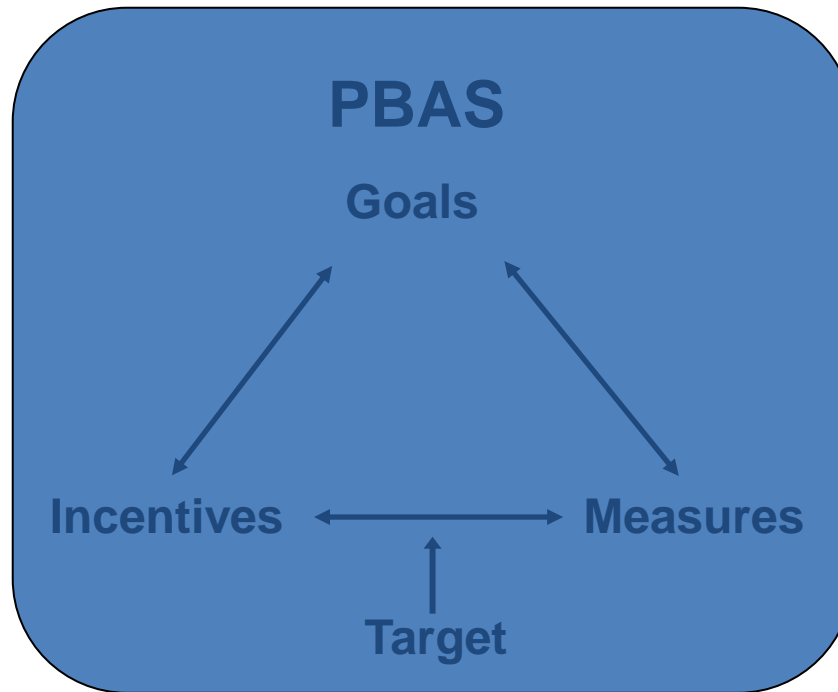
Goals

Incentives

Measures

Target





*Do people agree on goals and can they be measured well?*

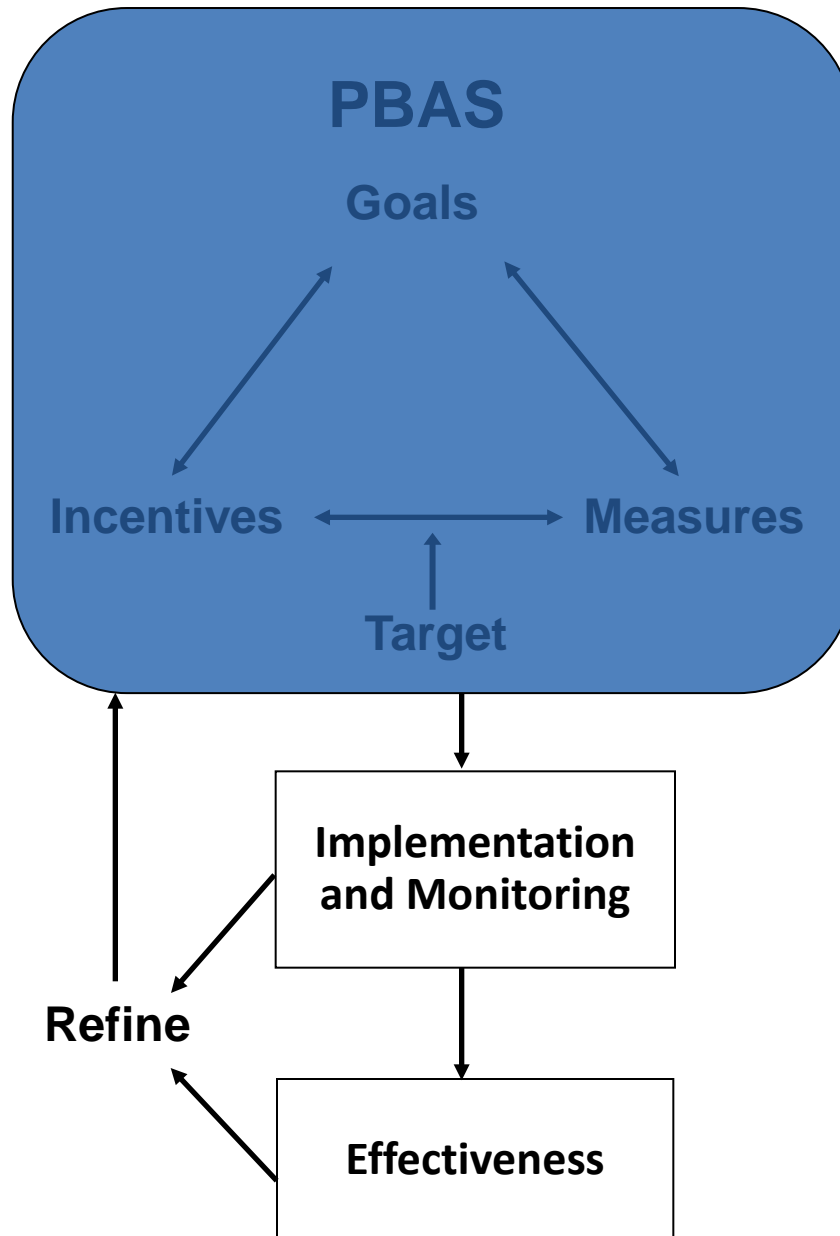
*Which people or units should be held accountable?*

*What measures can reliably, fairly and robustly reflect attainment of goals?*

*What targets will focus attention appropriately?*

*What incentives will motivate changes in behavior?*

# *Performance-Based Accountability Systems Should Not Be Static*









corbis.

