
LESSONS ON THE DYNAMICS OF PERFORMANCE MEASUREMENT SYSTEM DESIGN AND IMPLEMENTATION

Carolyn J. Heinrich
University of Wisconsin-Madison

Prepared for the Symposium on Health Care Payment
Reform and Pay-for-Performance in Wisconsin
Madison, Wisconsin, April 2008



Origins of performance measurement system design

- Early performance measurement systems based on scientific management principles
 - Organizational goals and production tasks known, employee efforts verifiable, self-interest dominating
 - Observe employee's competitive level of effort
 - Establish benchmark level of performance
 - Pay workers acc. to simple linear model (base pay + bonus)
 - Simple linear incentive scheme still widely used
 - Simplicity attractive, high costs of establishing more intricate contract or incentive system
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Basic challenge for incentive system designer

- Choose performance measure(s) to align effects of employee actions on measured performance (P) with effects of those same actions on value-added (V)
 - Effect of an action on P may be different than its effect on V
 - We may have little information about functions relating P to V
 - Important insight from theory and practice: desirability of providing incentives for any one activity decreases with difficulty of measuring performance in any other activities that make competing demands on employees' time and attention
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Other measurement challenges

- Data limitations constrain measurement
 - Proxy measures, measurement error
 - Multiple measures—need weights, more complex
 - Subjective vs. objective performance measures
 - Inadequate data collection/management capacity
 - Risk adjustments for uncontrollable factors
 - Performance standards adjustments rare, inadequate (but better than none at all?)
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Employee motivations and choice of action

- Why take actions that increase only measured performance (or have little effect on value-added)?
 - Greater investments of resources and effort required to affect V compared to that required to increase P
 - V not in contract—little incentive to choose higher-cost actions to produce V if they do not correlate with actions that affect P
 - Other motivations to exert effort in work
 - Public service motivation—ethic to serve the public
 - Organizational stewards perceive personal needs and interests as being met by achieving organizational goals
 - “Intrinsically” motivated employees care about work (derive intrinsic rewards) and less so about monetary compensation
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Performance incentive system dynamics

- Assumptions of dynamic model of performance incentive system
 - Performance measures' distortions typically unknown before implementation
 - Incentive designers begin with imperfect understanding of employees' means for influencing measured performance
 - Public sector incentive designers far removed from front-line workers and technology of production
 - Employees know/learn how to exploit weaknesses through day-to-day experience with production technology
 - Employees choose effort to maximize compensation in current period (net of effort); incentive designer monitors employee actions to learn extent of measure's distortion
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Dynamic model implications

- Alignment between measured performance (P) and true goal (V) decreases as performance measure is activated or more heavily rewarded
 - Once activated, employees focus on measure and explore *all* strategies for raising P—not just those that also increase V
 - Example: Sears Auto Centers charging for unnecessary repairs to meet service quotas
 - Incentive system designer learns about effectiveness of a performance measure over time; employee learns how to control performance measure
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Dynamics of learning and gaming

- Amount of gaming depends on initial distortion of performance measure, length of time for employees to learn, and rate of learning
 - Gaming will increase as employee acquires experience and learns measure-specific gaming technology
 - Effectiveness of a performance measure will decline over time (possibly to point where it is best to discard/replace it)
 - System design should not encourage employees to exert more effort in activities (or with clients) to influence performance close to the standard
 - Examples: workforce development, welfare-to-work programs, education
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JTPA performance measures, 1987-1989

Employment Rate at Termination

Fraction of trainees employed at termination

Welfare Employment Rate at Termination

Fraction of trainees receiving welfare at date of application who were employed at termination

Average Wage at Termination

Average wage at termination for trainees who were employed at termination

Cost per Employment

Training center's year's expenditures on adults divided by the number of adults employed at termination

Employment Rate at Follow-up

Fraction of trainees who were employed at 13 weeks after termination

Welfare Employment Rate at Follow-up

Fraction of trainees receiving welfare at date of application who were employed at 13 weeks after termination

Average Weekly Earnings at Follow-up

Average weekly wage of trainees who were employed 13 weeks after termination

Average Weeks Worked by Follow-up

Average number of weeks worked by trainees in 13 weeks following termination

Youth Employment Rate at Termination

Fraction of youth trainees employed at termination

Youth Employability Enhancement Rate

Fraction of youth trainees who obtained employment competencies (see note 3 below)

Youth Positive Termination Rate

Fraction of youth trainees who were "positively terminated" (see note 3 below)

Youth Cost per Employment

Training center's year's expenditures on youths divided by the number of youths positively terminated

Current WIA performance measures

Adults	Dislocated workers
Entered employment rate	Entered employment rate
Employment retention rate at 6 months	Employment retention rate at 6 months
Average earnings change in 6 months	Earnings replacement rate in 6 months
Employment and credential rate	Employment and credential rate
Older youth (19-21)	Younger Youth
Entered employment rate	Retention rate
Employment retention rate at 6 months	Skill attainment rate
Average earnings change in 6 months	Diploma rate
Employment/education/training credential rate	
Customer satisfaction	
Participant and employer satisfaction (based on statewide survey questions)	



Four periods of Wisconsin Works (W-2)

contracts

- **1st contract** (1997-99): focus on welfare caseload reduction
 - Unspent budget funds kept as performance bonuses
 - **2nd contract** (2000-01): emphasis on W-2 service quality
 - Performance standards expanded and profits/bonuses restricted
 - **3rd contract** (2002-2003): further refined performance standards system
 - Additional performance standards and introduction of weights
 - **Fourth contract** (2004-2005): Renewed emphasis on cost reduction; performance bonuses discarded
 - **Subsequent contract**: reorganized service provision
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W-2 agency performance by standard (2000-2001 vs. 2002-2003 contracts)

Performance Standards & Target Levels		2000-2001		2002-2003	
		Number and % of Agencies Achieved			
Entered Employment	Base Performance Level (35%)	70	99%	64	94%
Job Retention: 30 days	Base Performance Level (75%)	71	100%	65	96%
Job Retention: 180 days	Base Performance Level (50%)	70	99%	64	94%
Full and Appropriate Engagement	Base Performance Level (80%)	68	96%	63	93%
Basic Education Activities	Base Performance Level (80%)	64	90%	60	88%
Educational Activities Attainment	Base Performance Level (<u>Optional</u> in 2000-2001)	3	4%	59	88%
Average Wage/ Earnings Gain	Base Performance Level (<u>Changed to optional</u> 2002-2003)	71	100%	28	42%
Regression-estimated Earnings Gain	Earnings gain and standard error followed by calculated % with any gain (using UI data)	<u>-118.52</u> (80.56)	37%	<u>-112.95</u> (133.40)	42%



Conclusions

- Incentive system designers in multitask environments (only some tasks measurable) need to understand what motivates employees and their means for influencing performance
 - Performance measures should be tried, evaluated, modified and/or discarded as employee responses to incentives become known
 - Gaming of performance measures complicates this process, as employees come to know distinct weaknesses or distortions of performance measures and how they can exploit them
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Conclusions (cont.)

- Dynamics are more complex with both incentive system designers and employees learning over time
 - Depending on what is assumed about learning (e.g., relative speeds and extent to which performance measures degrade), this dynamic may not end
 - High-stakes elements of recent performance incentive systems exacerbate pressures and feed dynamics and gaming responses
 - Will incentive designers quit the game or continue to evolve?
 - Additional empirical and theoretical exploration of dynamic aspects of performance measurement systems is needed
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