

Cost-Inclusive Evaluation: Examples from Mental Health and Substance Abuse Services

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Room: Skyway 283

Session Abstract:

... You will finish this workshop knowing what "cost studies" all too often are, and what cost-inclusive evaluation can and should be. You will see how evaluations that include resources used the program, plus resources generated by the program, can help programs flourish. In addition, you will understand the basic tools for conducting and using several forms of cost-inclusive evaluation in your program and in your decisions

slides available at:

- <http://www.brianyates.net/info/aea-2015-presentation-c.pdf>
- for viewing only; please do not distribute or use in your own work.
- Thanks!

what cost-inclusive
evaluation is
... and can be

why *cost-inclusive*?

"All human endeavors have three things in common:

- they consume *resources*
- they involve certain means or *processes*
- and they produce outcomes...

At the very least, what we do, say or think consumes time and yields an outcome of no change at all."

Yates (1980), page 3

Evaluating the costs of programs is the missing link between

- doing a superficial evaluation
- doing an evaluation that gets changes made and funding delivered

Evaluating the monetary outcomes of programs can help, too.

evaluate *programs*,
not just their costs
and outcomes

program as black box?

modeling a program

RESOURCES

(examples)

- staff time, expertise
- consumer time, expertise
- space
- assessment instruments
- client time
- transportation
- medication
- iDevices
- & much more!

ACTIVITIES

(examples)

- intake
- assessment
- diagnosis
- assignment to team
- social skills
- ongoing assessment
- relapse prevention
- transition to self-management

PROCESSES

(examples)

- heightened client expectation of success
- acquisition of social skills
- acquire relapse prevention skills
- acquire self-management skills

OUTCOMES

(examples)

- improved functioning
- less drug use
- more income
- more productivity
- less use of health services
- less use of criminal justice services

definitions & quick
examples

the “cost study”

- cost analysis (CA)
 - budgets versus expenditures
 - which is better?
 - why budgets are more popular
- cost feasibility analysis (CFA)
 - develop an itemized budget
 - compare to funds, other resources available
 - why it's not enough

"cost study" continued

- activity-based costing (ABC)
- itemizing budgets by resources and activities
- why that's nice
- why it's not enough ...

		activities		
		activity 1	...	activity j
resources	resource 1			
	...			
	resource i			

cost-effectiveness analysis

CEA

“What does this program accomplish relative to its cost?”

examples:

- cost per drug-free day
- cost per child prevented from smoking
- cost per year of life saved
- cost per quality-adjusted life year gained (\$/QALYG)

cost-benefit analysis

CBA

"Is the cost of this program justified relative to its outcome?" ... "Is this a good investment?"

examples:

- ratio of dollars spent for therapy versus dollars saved in reduced unnecessary use of health services
- net benefit (after subtracting costs) of diversion program for homeless adults (reduced Emergency Department visits, days of incarceration)

ratio: benefits/costs

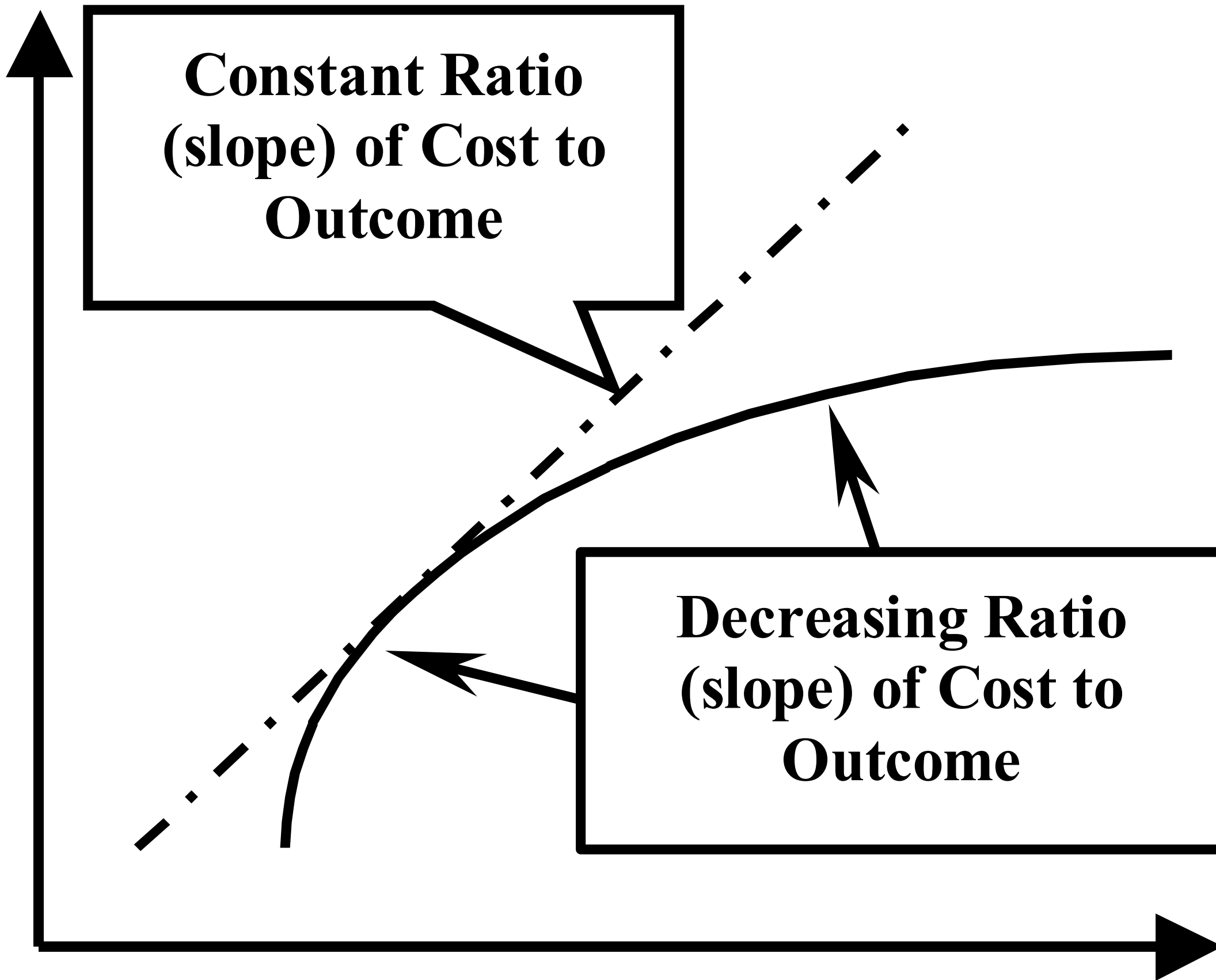
- advantages: simple, memorable, “understandable”
- problems:
 - ratios are, essentially, slopes
 - assumes a linear cost → outcome relationship
 - discards info on:
 - diminishing returns
 - economies of scale
 - step functions

Outcome

**Constant Ratio
(slope) of Cost to
Outcome**

**Decreasing Ratio
(slope) of Cost to
Outcome**

Cost



example: needle exchange

- 12 years of data, 70% drop:
 - new HIV cases decreased from 19 to 6 per month
- 60 prevented HIV infections per year (conservative est.)
- savings: \$380,000 lifetime/HIV case (CDC, 2010) = \$22,800,000
- cost of needle exchange: \$650,000 / year



A needle obtained from a needle-exchange program in Seattle. (David Ryder/Reuters)

- \$22,800,000 saved ... for 1 year of needle exchange operation - \$ cost of program = \$22,150,000 net benefit

units for benefits and costs
need to be the same ...

- but do not have to be monetary ...
- NNT (Number Needed to Treat ... for one person to benefit): David Newman
- "benefit > harm"? "harm" \equiv ?
- antibiotics?
 - 1 in 4 infections prevented
 - 1 in 22 lives saved
- <http://www.thennt.com>

SUBJECTIVE COSTS AND BENEFITS OF SELECTED OBESITY REDUCTION STRATEGIES

<i>Obesity Reduction Strategy</i>	<i>Perceived "Difficulty"</i>		<i>Perceived "Usefulness"</i>	
	<i>Mean</i>	<i>s.d.</i>	<i>Mean</i>	<i>s.d.</i>
Eating Only in Designated Eating Place	4.6	(3.1)	7.3	(3.0)
Reducing Number of Eating Episodes	5.1	(3.3)	8.5	(2.4)
Reducing Number of Snacks	6.4	(3.1)	8.9	(2.0)
Eating at Regular Times	4.8	(3.5)	7.5	(3.1)
Graphing Weight	1.8	(1.5)	5.8	(3.3)
Leaving Some Food on Plate	7.3	(3.4)	6.9	(3.2)
Shopping for Food from a List	3.0	(2.8)	7.8	(2.9)
Keeping a Food Diary	4.2	(2.9)	8.5	(2.5)
Counting Calories and Choosing Foods Lowest in Calories	5.4	(3.2)	8.4	(2.6)
Imposing a Delay Between an "Urge" to Eat and Eating	7.1	(3.2)	8.0	(2.6)
Keeping Foods in Kitchen and in "See-Proof" Containers	2.9	(2.6)	6.1	(3.4)

NOTE. "s.d." = standard deviation. Adapted from Yates (1978).

return on investment

ROI

- "how much will we make back on our (societal) investment?"
- whether ever?

time to return on investment TROI

- like CBA but emphasizing time 'til
- need to adjust benefits & costs for...
 - present value
 - inflation

social return on investment SROI

“The concept is simple: pay providers after they have demonstrated success, not based on the promise of success, as is done now.”

evaluating more than
costs and outcomes

effects on cost study

findings of:

- delivery systems
- international context

delivery systems can be
primary cost determinants

Peanuts

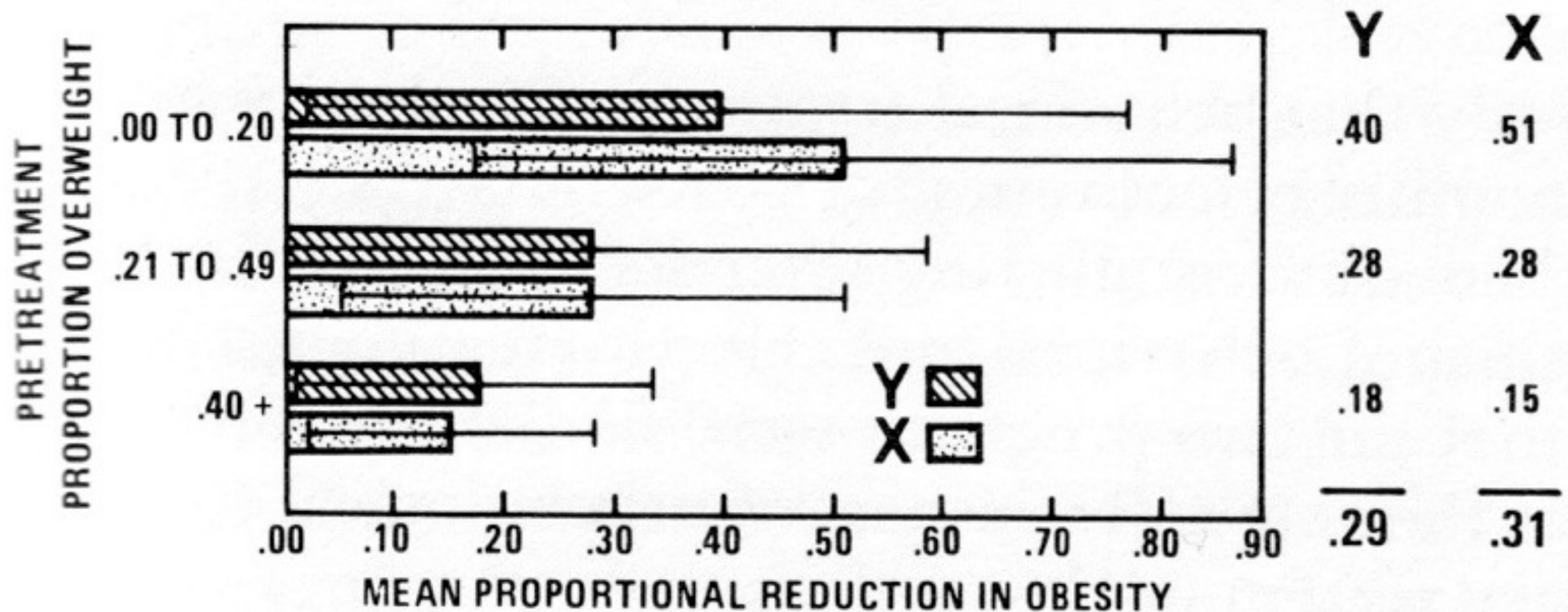
BY CHARLES M. SCHULZ



weight loss treatments

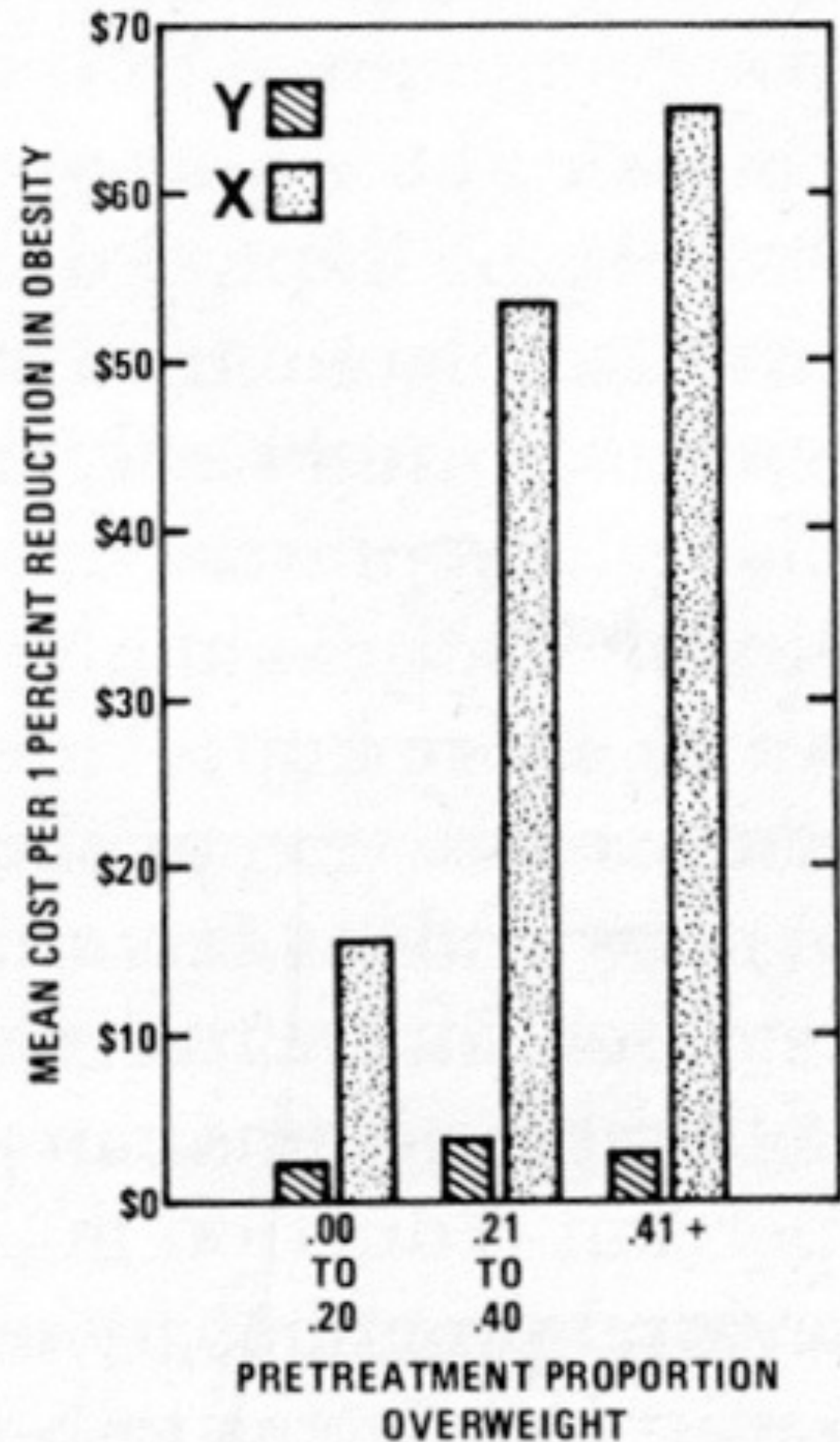
Yates, B. T. (1977). Improving the cost-effectiveness of obesity programs: three basic strategies for reducing the cost per pound. *International Journal of Obesity*, 2, 249-266.

treatments Y and X ...
effectiveness: $Y = X$

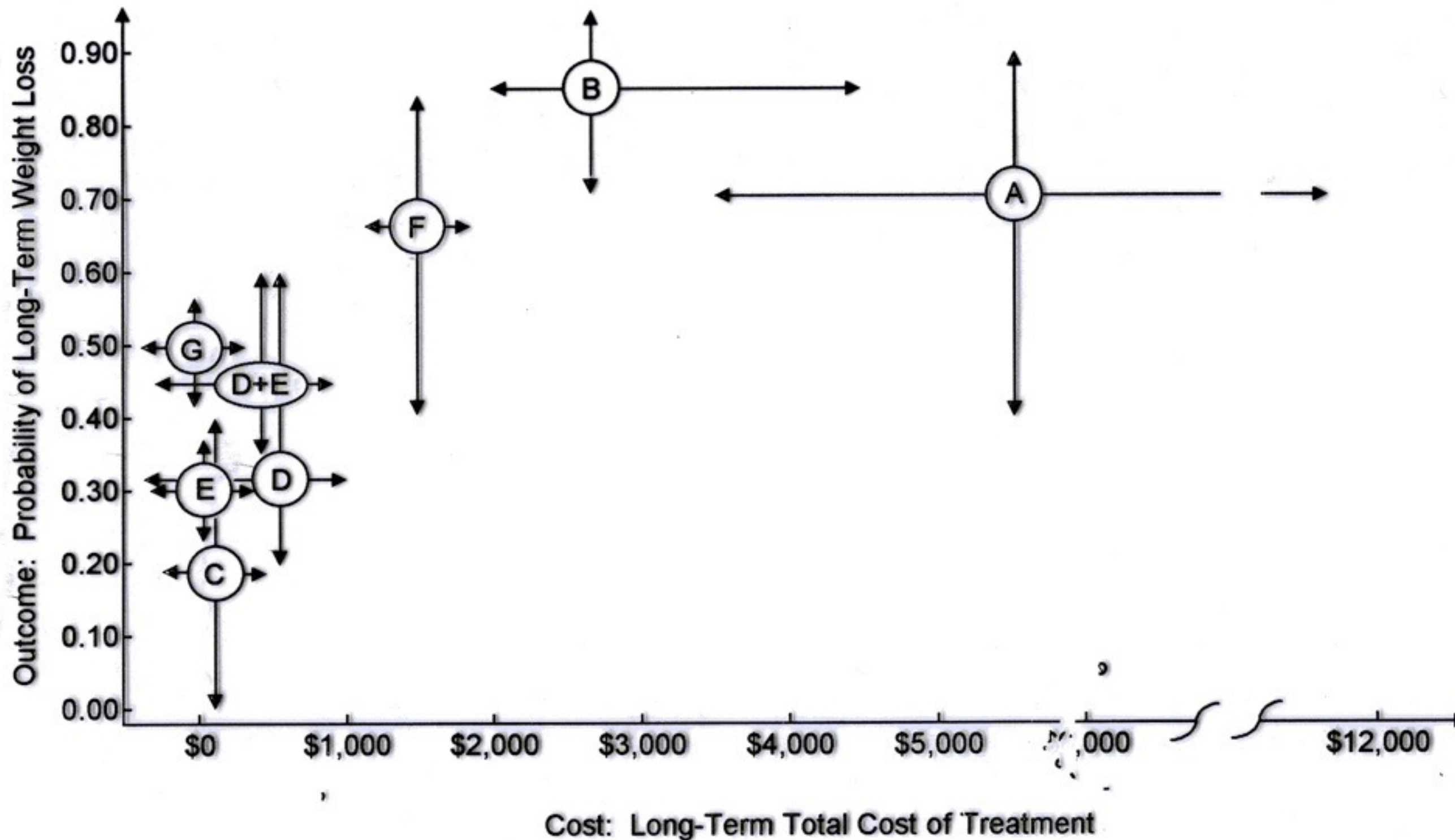


costs:

$X > Y$



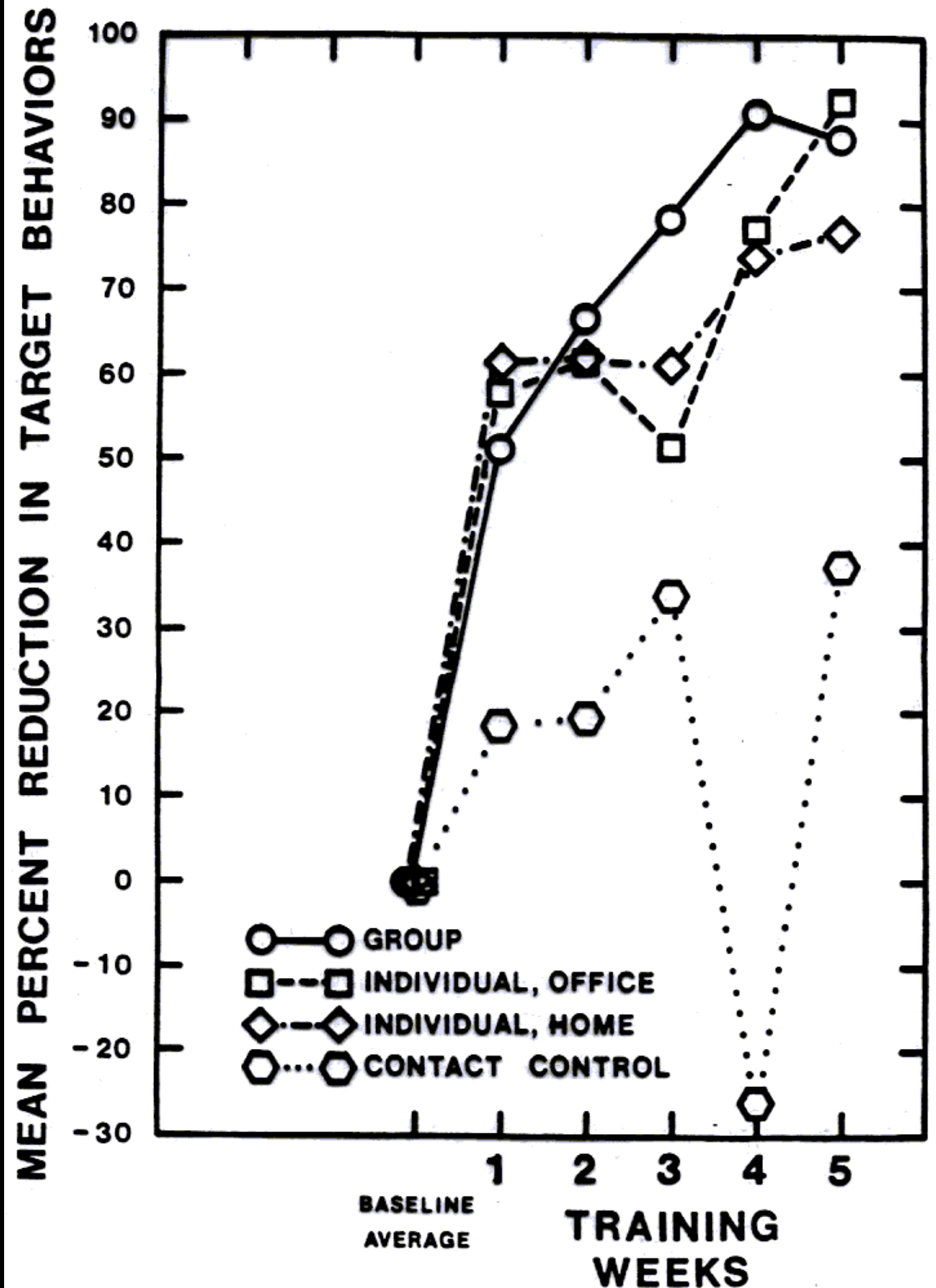
cost → effectiveness areas
(a 2-hour CEA!)



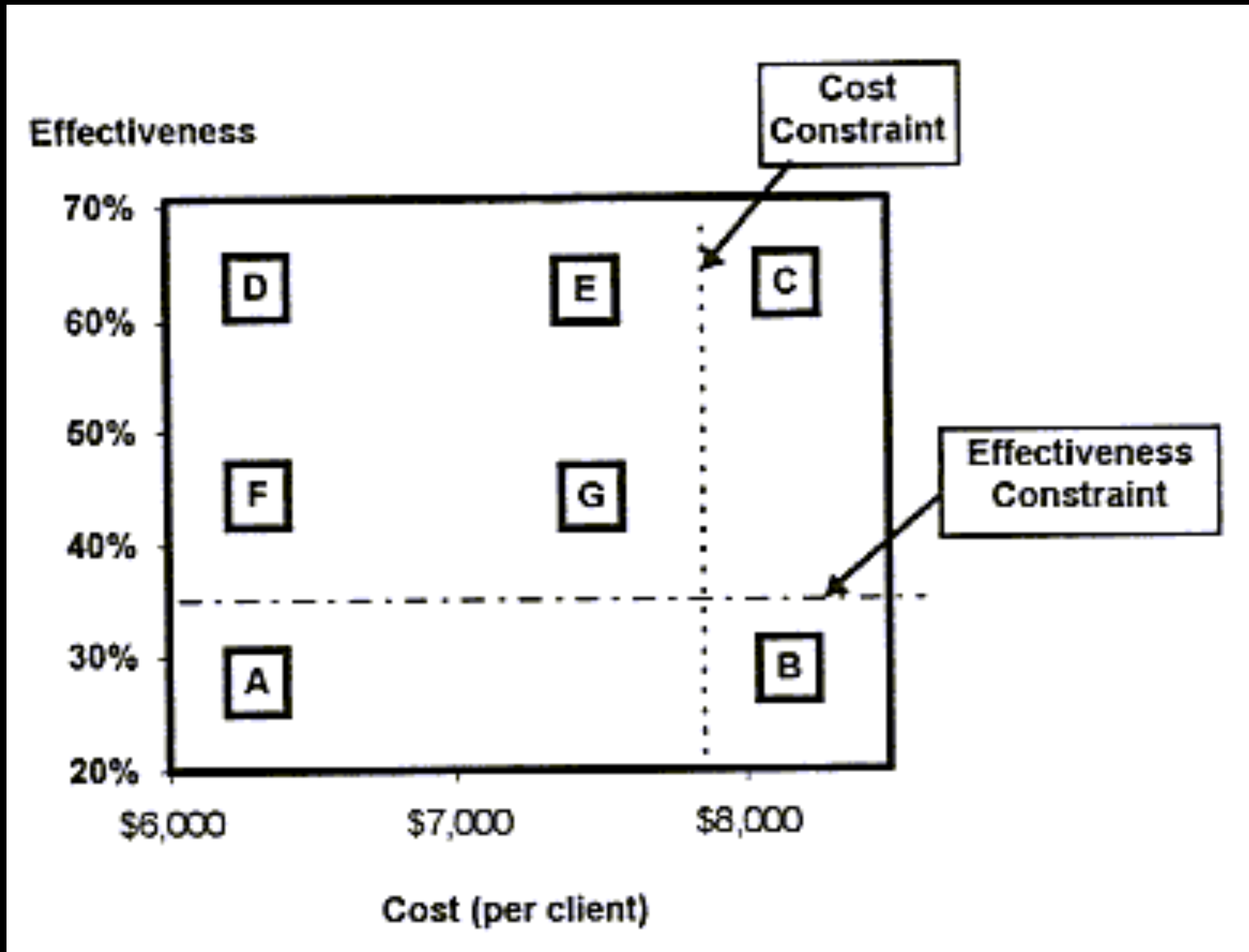
child-management training

Siegert, F. A., & Yates, B. T. (1980). Cost-effectiveness of individual in-office, individual in-home, and group delivery systems for behavioral child-management. *Evaluation and the Health Professions*, 3, 123-152.

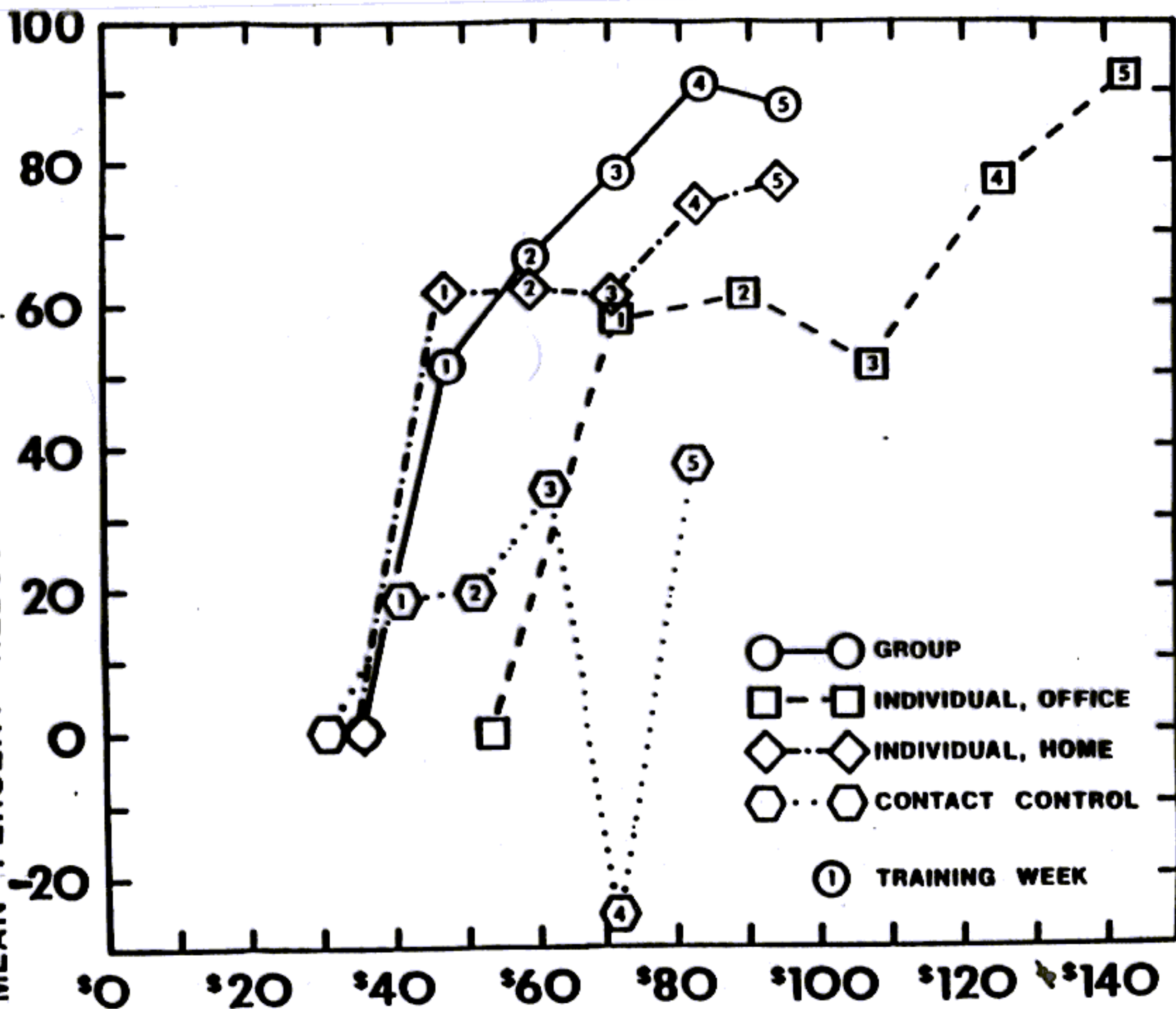
Outcomes =
 $f(\text{Procedures})$



Decision-Making in Cost → Outcome Graphs



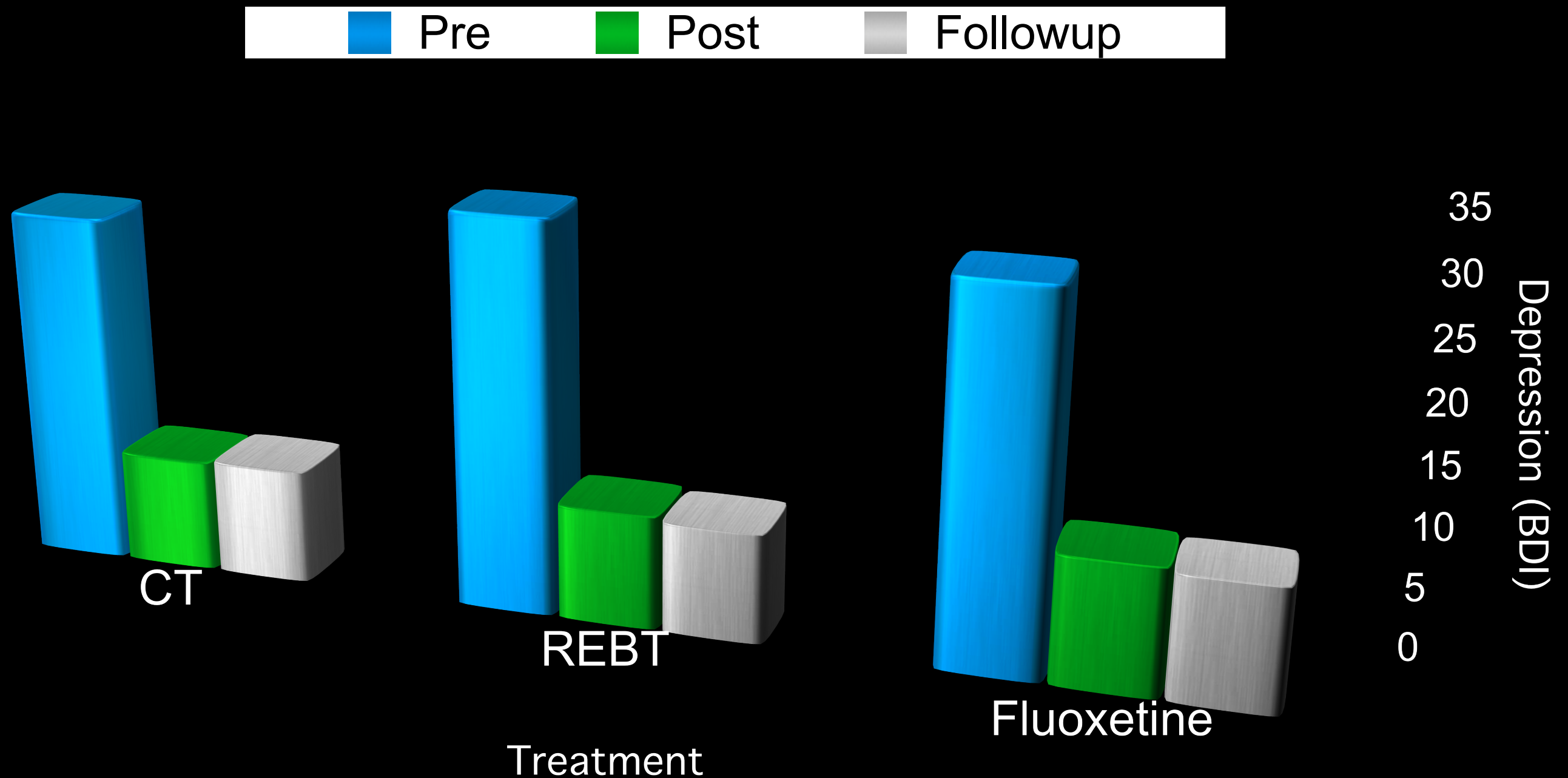
MEAN PERCENT REDUCTION IN TARGET BEHAVIORS



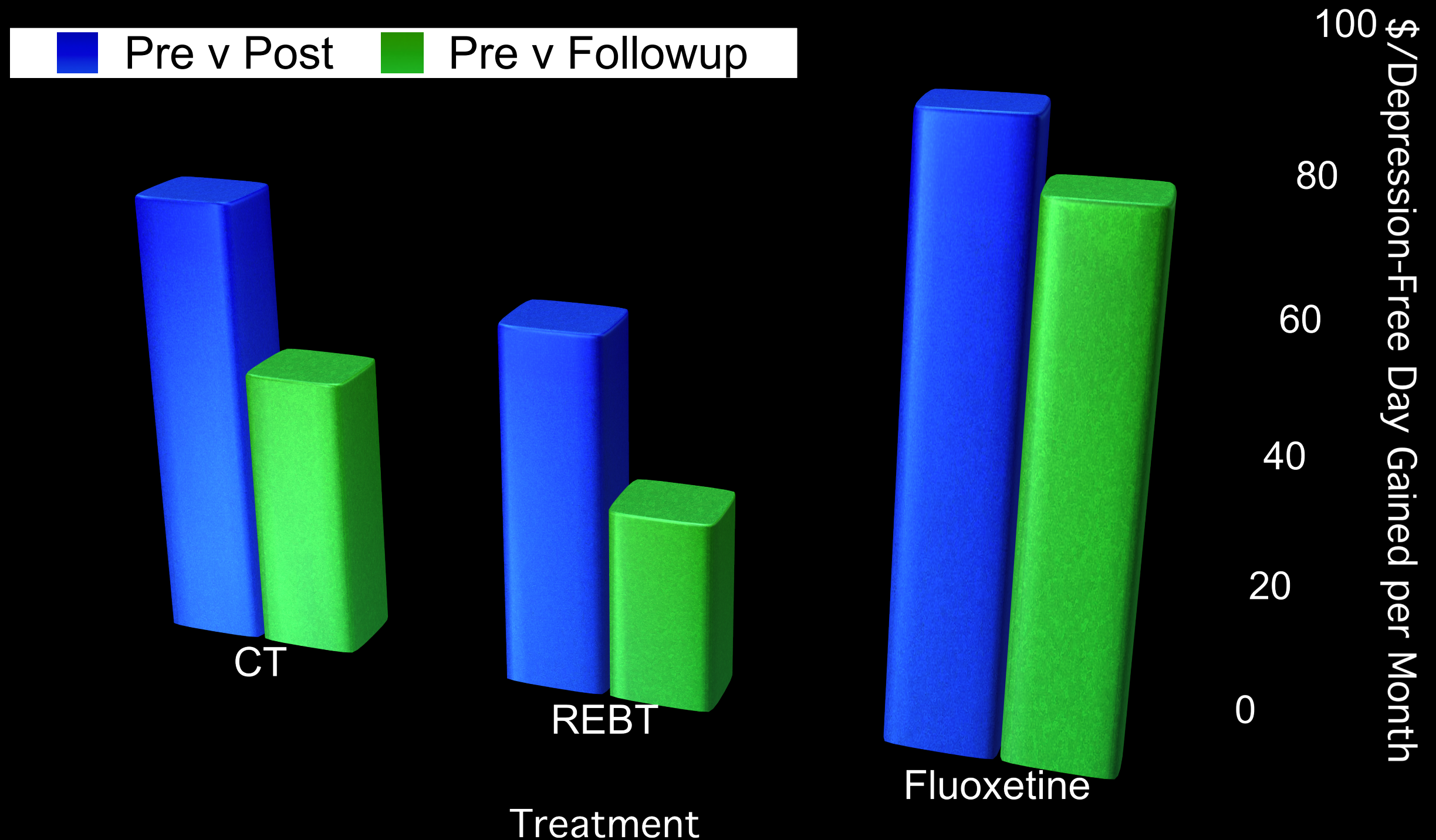
context & CEA & CUA of cognitive-behavioral and pharmacologic treatments for depression

Sava, F. A., Yates, B. T., Lupu, V., Hatieganu, I., Szentagotai, A., & David, D. (2009). Cost-effectiveness and cost-utility of cognitive therapy, rational emotive behavioral therapy, and fluoxetine (Prozac®) in treating depression: A randomized clinical trial. *Journal of Clinical Psychology*, 65, 36-52.

depression (Beck Depression Inventory)



cost per depression-free day gained per month

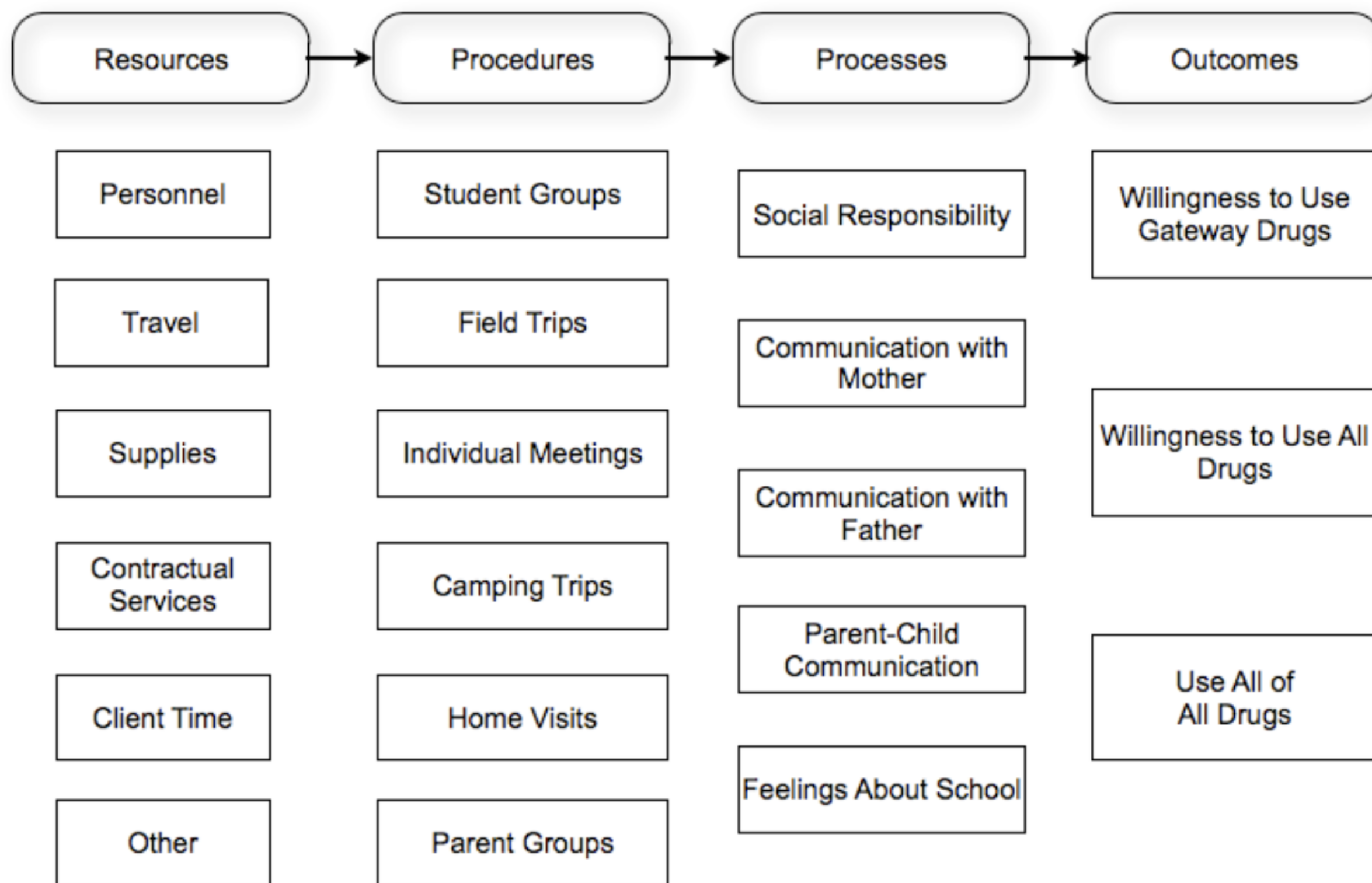


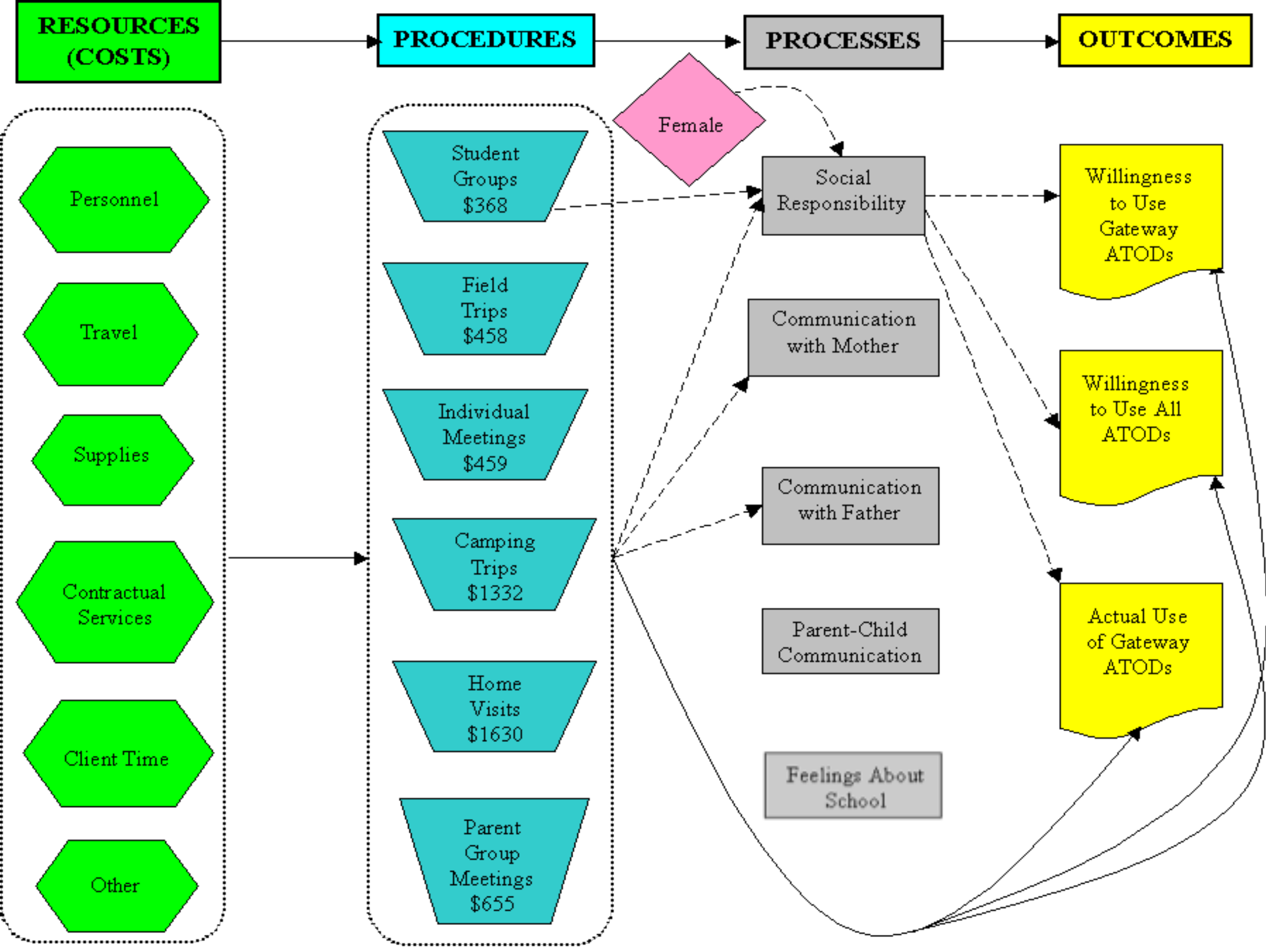
when a program
becomes iatrogenic,
cost-inclusive evaluation
that models the
program can fix it

Resource → Activity →

Process → Outcome model
of a Drug Abuse Prevention
program

Audrey Kissel's MA thesis at AU





resources for
learning more

cost-inclusive evaluation at the American Evaluation Association (AEA)

Cost, Effectiveness, Benefits, and
Economics TIG

CEBE TIG

websites for cost-inclusive evaluation



- Tufts University at their Center for the Evaluation of Value & Risk in Health
- <https://research.tufts-nemc.org/cear4/default.aspx>

Washington State Institute for Public Policy

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Updated Inventory of Evidence- and Research-Based Practices: Washington's Learning Assistance Program

Annie Pennucci, Matt Lemon

September 2014

Washington State provides funding to school districts to help underachieving students through the Learning Assistance Program (LAP). The 2013 Washington State Legislature directed the Washington State Institute for Public Policy to prepare an inventory of evidence-based and research-based effective practices, activities, and programs for use by school districts in LAP and to update the inventory each two years thereafter.

This report describes the updated inventory of evidence-based and research-based practices for use in LAP.

Download: [Report](#) [Inventory](#) [Benefit-Cost Results](#)

Report ID: 14-09-2201

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Preventing Youth Substance Use: A Review of Thirteen Programs

Sean Hanley, Steve Aos

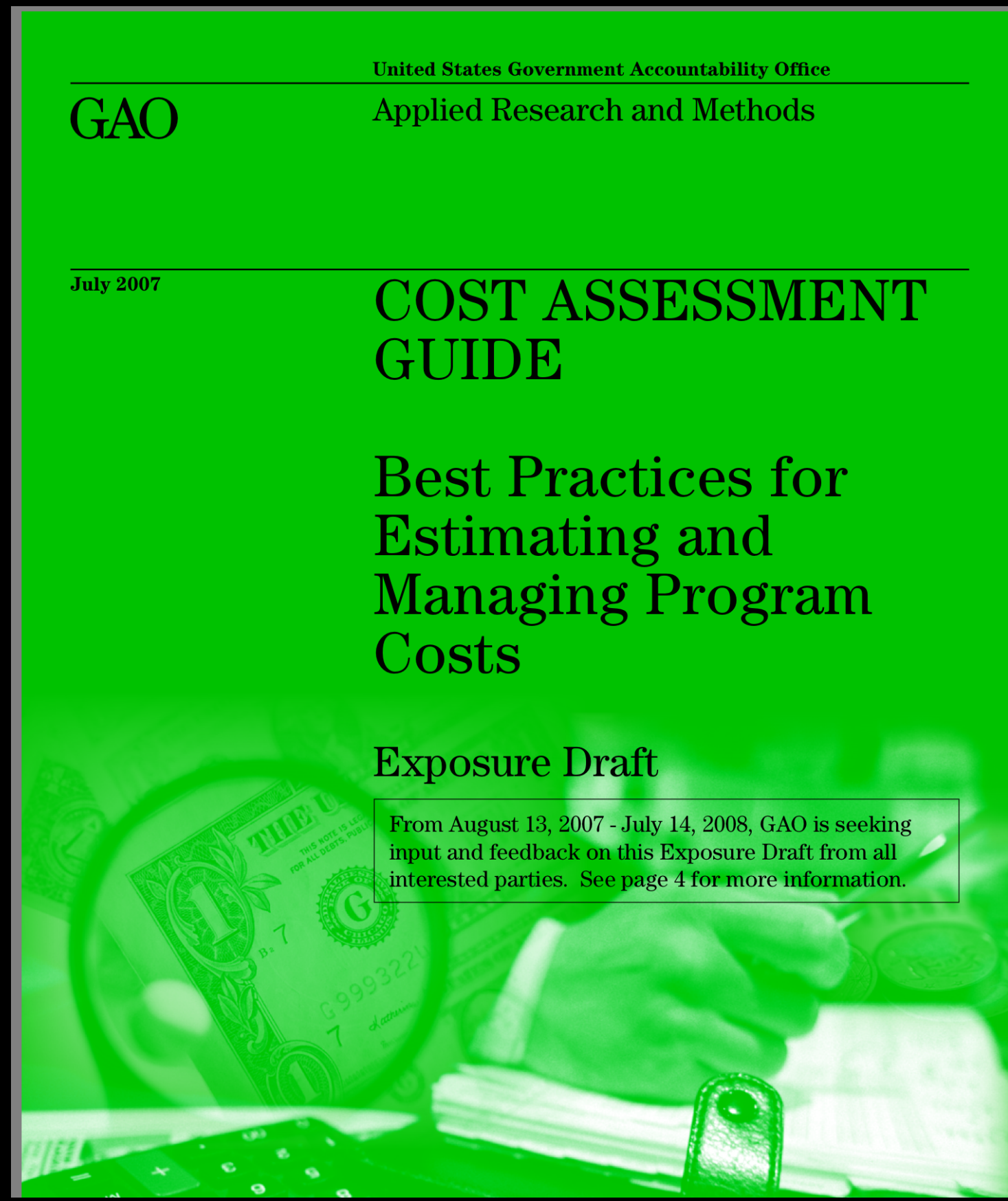
September 2014

Initiative 502, passed by Washington voters in November 2012, legalized recreational marijuana use for adults in the state. The initiative directed WSIPP to evaluate the policy by considering benefits and costs across a number of key areas including public health, public safety, and criminal justice.

As part of this assignment, we reviewed the evaluation literature on 13 youth prevention programs. These programs are on the state

US GAO Cost Assessment Guide

- [http://
www.gao.gov/
new.items/
d071134sp.pdf](http://www.gao.gov/new.items/d071134sp.pdf)
- (2007)



United States Government Accountability Office

GAO

Applied Research and Methods

July 2007

COST ASSESSMENT GUIDE

Best Practices for Estimating and Managing Program Costs

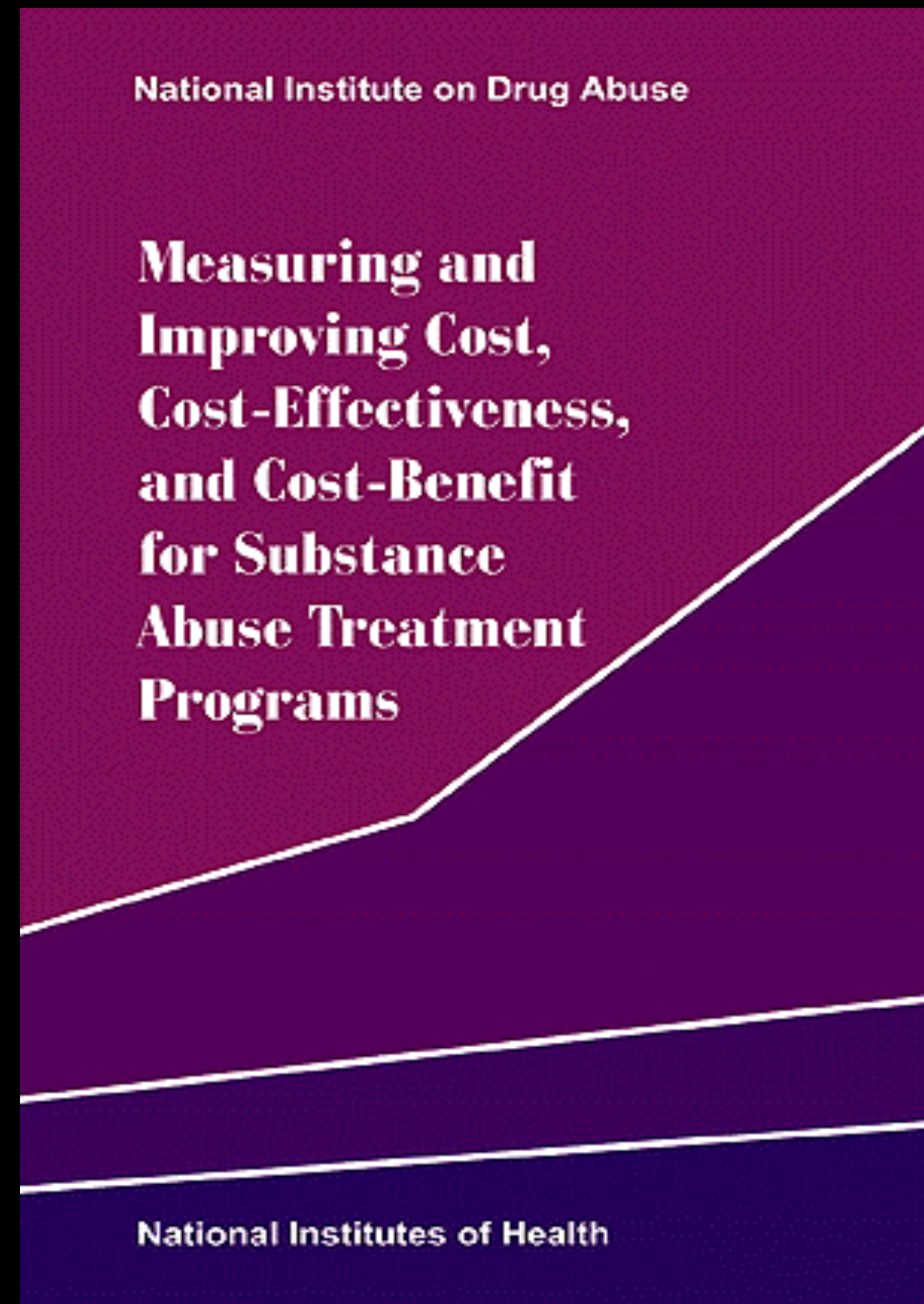
Exposure Draft

From August 13, 2007 - July 14, 2008, GAO is seeking input and feedback on this Exposure Draft from all interested parties. See page 4 for more information.

[http://archives.drugabuse.gov/
IMPCOST/IMPCOSTIndex.html](http://archives.drugabuse.gov/IMPCOST/IMPCOSTIndex.html)

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on Drug Abuse
(NIDA) manual



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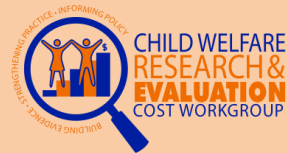
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<http://www.acf.hhs.gov/programs/cb/resource/cost-workgroup>



COST ANALYSIS IN PROGRAM EVALUATION

A GUIDE FOR CHILD WELFARE RESEARCHERS
AND SERVICE PROVIDERS

• Create an estimate
of total costs

• Estimate program
component costs

a (1 of 28)



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Cost Analysis in Program Evaluation: A Guide for Child Welfare Researchers and Service Providers

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This guide is relevant for multiple audiences, including program directors and evaluators, child welfare agency administrators, funders of research studies and evaluation projects, and other important stakeholders who rely on child welfare evaluation.

<http://aspe.hhs.gov/pdf-report/guide-analyzing-cost-effectiveness-community-public-health-prevention-approaches>

Guide to Analyzing the Cost-Effectiveness of Community Public Health Prevention Approaches

Prepared for

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