



EVALUATION 2013:

Evaluation Practice in the Early 21st Century

October 14-19, 2013 | Washington, DC

**Skill-Building
Workshop**

Cost-Inclusive Evaluation (CIE)

Planning It, Doing It, Using It

overview of cost-inclusive evaluation

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.

your workshop leader

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schedule

8:00	overview of cost-inclusive evaluation
8:15	evaluating costs
8:45	evaluating benefits & other outcomes
9:00	combining cost and outcome info
9:15	beyond costs and outcomes

you will learn:

- what a “cost study” is ... and can be
- how evaluations can include resources used, and resources produced, by a program
- basic tools for conducting and using several forms of cost-inclusive evaluation

overview of cost-inclusive evaluation

What a cost study is ...

overview of cost-inclusive evaluation

modeling program theory:



overview of cost-inclusive evaluation

types of cost studies

- cost only
 - program cost ... cost per client per visit
- outcomes (monetary) only
- cost → outcome
 - cost → benefit
 - cost → effectiveness, cost → utility
- resource → activity → process → outcome

tools for cost-inclusive evaluation

tools

for cost-inclusive
evaluation

tools for cost-inclusive evaluation

... tools to measure

- resources used (aka “costs”)
- resources produced (aka “benefits”)

by a program

by programs

tools for cost-inclusive evaluation

Qualitative tools...

- shift rapidly between multiple perspectives
- view costs as not money
- view outcomes possibly as money
- consider that neither outcomes nor costs may be what's most important

tools for cost-inclusive evaluation

Quantitative tools...

- spreadsheet functions:
inflation, present-value
- statistics
 - nonparametric analyses
 - parametric analyses

tools for cost-inclusive evaluation

for quant & qual evaluation...

database access to the region's:

- health service system
- criminal justice system
- income supplement / welfare system
- other entitlement providers

tools for cost-inclusive evaluation

To do CIE (cost-inclusive evaluation):

awareness of resistance

- ... to evaluation in general
- ... to cost-inclusive evaluation in particular
- deal-with-able, if not solvable

perhaps: resistance \propto importance

evaluate costs

evaluating costs

evaluate costs

costs can be reported as:

- cost per client
- cost per "slot" ... per "bed"
- cost per client day
- cost per group

evaluate costs

problems with “cost”

- not just budgets, not just accounting records
- may not include essential resources:
 - volunteers' time
 - interns' externs' time
 - under-paid staff member's time
 - space rented below-market
 - donated food, transportation, equipment

evaluate costs

re-conceptualizing costs

- “costs” as what is paid
 - ...to assemble the resources for a program
- “costs” as the value of program “ingredients”
types and amounts of resources, e.g.,
 - personnel time
 - physical plant
 - supplies

evaluate costs

stakeholder perspectives on costs

- provider
- consumer
- family members
- taxpayer
- community
- policy makers
- funders
- evaluator!

evaluate costs

alternative definitions

- What was paid for them (price cost)
- What it took to get them (price, shipping...)
- What would need to be paid for them (replacement cost)
- What they are worth to the community, society (opportunity cost)
- What they are, and how much of them was used (complete description & quantification)

evaluate costs

costs as types & amounts of resources used

- ... to show contribution of volunteered services and donated facilities
 - fairer comparisons between programs
- translate costs to different countries and times
- replicate program
- understand of what the program is
- improve effectiveness or reduce costs or both

evaluate costs

common cost data options

- methods
 - survey
 - self-report
 - observation
- instruments
 - computer (e.g., Drug Abuse Treatment Cost Analysis Program, DATCAP)
 - paper-and-pencil spreadsheets

evaluate costs

my advice to measure costs:

ask representative of each interest group to:

- list the activities of the program--what it does
- for each activity, list the resources invested in the Activity by each interest group
- In the resulting resource → activity matrix, estimate, the amount of each resource used for each activity
- verify estimates with actual measurements

evaluate costs

activities (examples)

- Individual Counseling
- Group Counseling
- Acupuncture
- Pharmacotherapy
- Education about HIV and STDs
- Vocational Counseling
- Case Management

evaluate costs

resources (examples)

- time and skills of treatment personnel
- administrators and office personnel
- space, furniture, equipment
- transportation
- communication services
- liability insurance
- financing

evaluate costs

construct Resource → Activity Matrices

- provider perspective
- consumer perspective
- consumer family perspective
- taxpayer perspective
- community perspective
- funder perspective
- evaluator perspective

evaluate costs

Resource → Activity Matrix

Program Resources ↓	← Program Activities →			
	Individual Counseling	Group Counseling	...	Evaluation
Personnel				
Space				
...				
Administration				

evaluate costs

Resource Use: Resource → Activity Matrix I

Program Resources ↓	← Program Activities →			
	Individual Counseling	Group Counseling	...	Evaluation
Personnel	200 hours	300 hours	...	40 hours
Space	300 square feet	600 square feet	...	60 square feet
...			...	
Administration			...	

evaluate costs

Unit Cost: Resource → Activity Matrix 2

Resources ↓	← Activities →			
	Individual Counseling	Group Counseling	...	Evaluation
Personnel	\$60/hour	\$40/hour	...	\$30/hour
Space	\$40/square foot	\$20/square foot	...	\$20/square foot
...			...	
Administration			...	

evaluate costs

Use \times Cost: Resource \rightarrow Activity Matrix 3:

Resources ↓	← Activities →			
	Individual Counseling	Group Counseling	...	Evaluation
Personnel	200 hours \times \$60/hour	300 hours \times \$40/hour	...	40 hours \times \$30/hour
Space	300 square feet \times \$40/square foot	600 square feet \times \$20/square foot	...	60 square feet \times \$20/ square foot
...			...	
Administration			...	

evaluate costs

Resource → Activity Matrix 3 after calc's

Resources ↓	← Activities →			
	Individual Counseling	Group Counseling	...	Evaluation
Personnel	\$12,000	\$12,000	...	\$1,200
Space	\$12,000	\$12,000	...	\$1,200
...			...	
Administration			...	

evaluate costs

total, add overhead: Resource → Activity Matrix 4

Resources ↓	← Activities →				Total of Resources
	Individual Counseling	Group Counseling	...	Evaluation	
Personnel	\$12,000	\$12,000	...	\$1,200	\$50,000
Space	\$12,000	\$12,000	...	\$1,200	\$30,000
...
Administration			...		\$100,000

evaluate costs

apportion overhead 1 of 2: Resource → Activity Matrix 5

Resources ↓	← Activities →				Total of Resources
	Individual Counseling	Group Counseling	...	Evaluation	
Personnel	\$12,000	\$12,000	...	\$1,200	\$50,000
Space	\$12,000	\$12,000	...	\$1,200	\$30,000
...			...		
Total Cost of Direct Services	\$35,000	\$30,000	...	\$7,000	\$100,000
Administration			...		\$100,000

evaluate costs

apportion overhead 2 of 2: Resource → Activity Matrix 6

Resources ↓	← Activities →				Total of Resources
	Individual Counseling	Group Counseling	...	Evaluation	
Personnel	\$12,000	\$12,000	...	\$1,200	\$50,000
Space	\$12,000	\$12,000	...	\$1,200	\$30,000
...			...		
Total Cost of Direct Services	\$35,000	\$30,000	...	\$7,000	\$100,000
Administration	\$35,000	\$30,000	...	\$7,000	\$100,000

evaluate costs

Resource Cost TOTALS

Resources ↓	← Activities →				Total of Resources
	Individual Counseling	Group Counseling	...	Evaluation	
Personnel	\$12,000	\$12,000	...	\$1,200	\$50,000
Space	\$12,000	\$12,000	...	\$1,200	\$30,000
...			...		
Total Cost of Direct Services	\$35,000	\$30,000	...	\$7,000	\$100,000
Administration	\$35,000	\$30,000	...	\$7,000	\$100,000
Total Cost of All Services	\$70,000	\$60,000	...	\$14,000	\$200,000

evaluate benefits & other outcomes

evaluating benefits &
other outcomes

evaluate benefits & other outcomes

assessing benefits

evaluate benefits & other outcomes

Benefits

- types of benefits
- measurement and monetization strategies

evaluate benefits & other outcomes

types of benefits

- cost-savings
 - reduced use of health services
 - reduce transfer payments (e.g., income maintenance)
- income enhancement
 - employment income
 - other, better measures of productivity?

evaluate benefits & other outcomes

can convert effectiveness to benefits

- to *monetize* cost-savings benefits
 - measure number of times each service used
 - find cost per service use (from program policies, records, other)
 - multiple service use x cost per service use

evaluate benefits & other outcomes

converting effectiveness to

benefits, continued

- *monetization* strategies for income(necessary!)
 - actual income, from self-report or records
 - estimated income, given profession or hours worked
 - include value of time volunteered, donated
 - include any enterprise profit!

evaluate benefits & other outcomes

Effectiveness (program- induced change in ...)	Transformation example:	Cost-savings Benefit:
criminal acts	\$ ___ per theft, \$ ___ per assault	savings to victims, society
drugs not purchased	\$ ___ per day of opiate use	money not spent on drugs
criminal justice services	\$ ___ per arrest, \$ ___ per court day, \$ ___ per jail day	reduced criminal justice expenses

evaluate benefits & other outcomes

Effectiveness (program- induced change in ...)	Transformation examples:	Cost-savings Benefit:
drug abuse treatment	\$___ per day of treatment	savings to patient, society
disability payments	\$___ per day of disability support	savings in disability support
health services	\$___ per ER visit, \$___ per inpatient day	savings in use of health services

evaluate benefits & other outcomes

assessing effectiveness

evaluate benefits & other outcomes

Effectiveness

- this is what evaluators excel at!
- from the same perspective as costs
- at the same level of specificity as costs
- But what to do with multiple outcomes?
- But how to compare the effectiveness of different programs?

evaluate benefits & other outcomes

When outcomes are multiple ...

- Common in human services, and in most organizations:
- examine their mission statements!

evaluate
benefits &
other
outcomes

OBSERVATION SHEET

Client: _____ Date: / / _____ Observer: _____ Companion: _____
 Site _____ From ____:____ P/AM to ____:____ P/AM

Effectiveness Variables

Time Intervals

1 2 3 4 5 6 7 8 9

Negative Behaviors	1. Lying/Cheating/Stealing									
	2. Noncooperative Verbal Response to Request									
	3. Noncooperative Nonverbal Response to Request									
	4. Late/Off-Task									
	5. Pestering Following Denial									
	6. Complain/Bitch/Cry to Adults									
	7. Negative Verbal Interaction									
	8. Negative Nonverbal Interaction									
	9. Playing Alone									
	10. Improper Manners									

Positive Behaviors	1. Honest									
	2. Cooperative Verbal Response to Request									
	3. Cooperative Nonverbal Response to Request									
	4. On Time/On-Task									
	5. Taking "No" for an Answer									
	6. Compliment/Thank/Smile to Adult									
	7. Positive Verbal Interaction									
	8. Positive Nonverbal Interaction									
	9. Playing with Others									
	10. Proper Manners									

evaluate benefits & other outcomes

operational definitions for effectiveness

meetings and instrument testing. For example: “Complaining/
Bitching/Crying to Adults” was defined as

... occurring in the absence of (i.e., at least 5 minutes after) any denial of child-initiated requests. *6N* [the behavior] is the critical, verbal expression of dissatisfaction with the present state of affairs. Crying, denoted by tears, and whimpering, are also members of the *6N* category. *6N* behaviors are usually preceded by “Why . . .?” as in “Why are we having spinach again?” “I hate Learning House” and “I feel like a dead horse” are also examples of *6N* behaviors. *6N* is never recorded during family meetings, when complaints and constructive criticism of Learning House and its clients and staff are openly solicited. Minor “tattling,” e.g., “I saw Johnny spill the cat’s milk,” also is a *6N* response.

evaluate benefits & other outcomes

Importance weightings from ratings:

² Mathematically expressed, the importance weightings were computed

$$W_b = \frac{\sum_{i=1}^m [r_{i,b} / (\sum_{b=1}^n r_{i,b} / n)]}{m}$$

where m is the total number of staff members who supplied ratings, n is the total number of effectiveness variables, and $r_{i,b}$ is the rating of importance given by staff member i for effectiveness variable b .

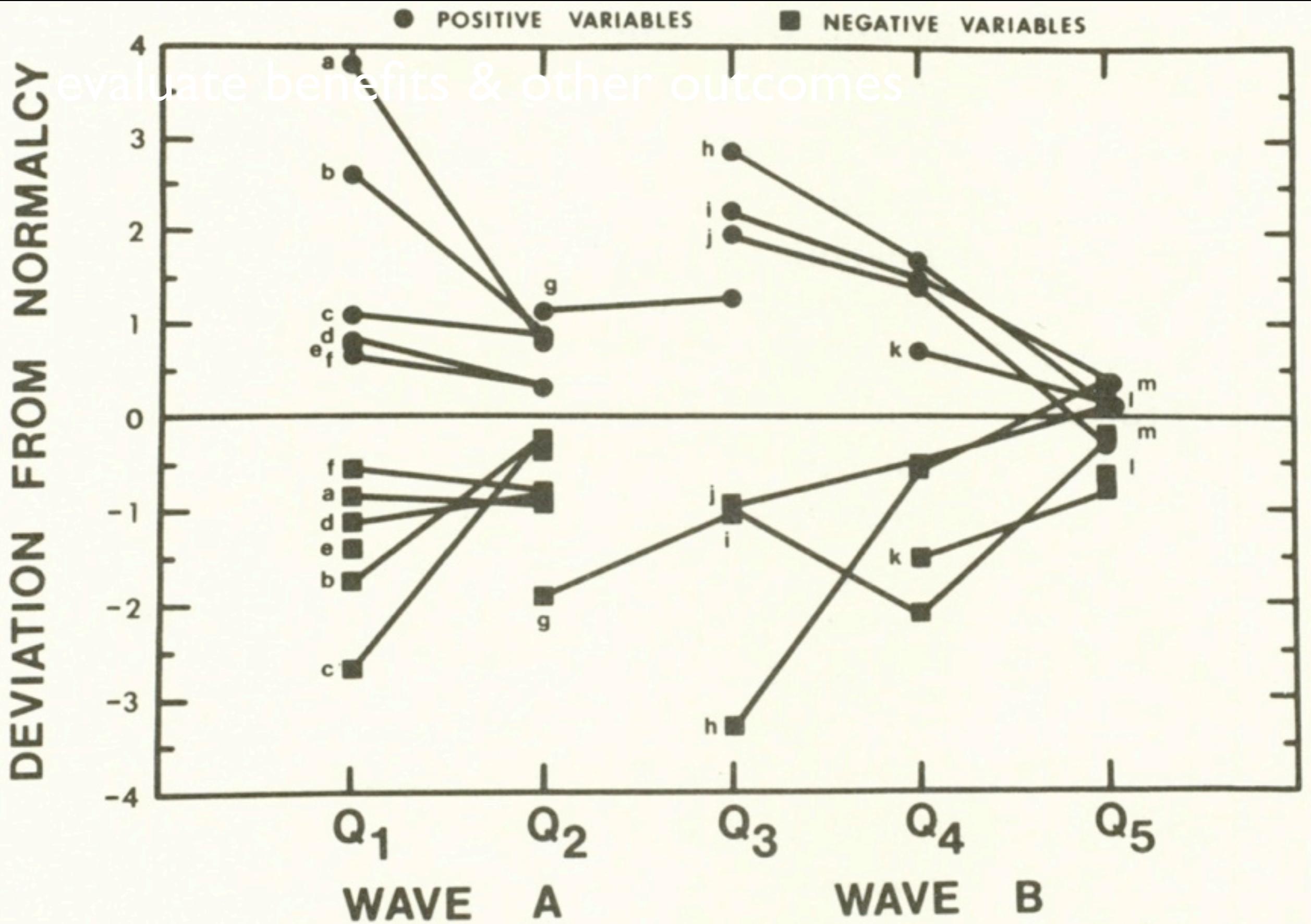


Figure 3. Mean effectiveness for positive and negative effectiveness variables for each child in two successive groups. Lower case letters indicate specific children. From Yates, Haven, and Thoresen (1979).

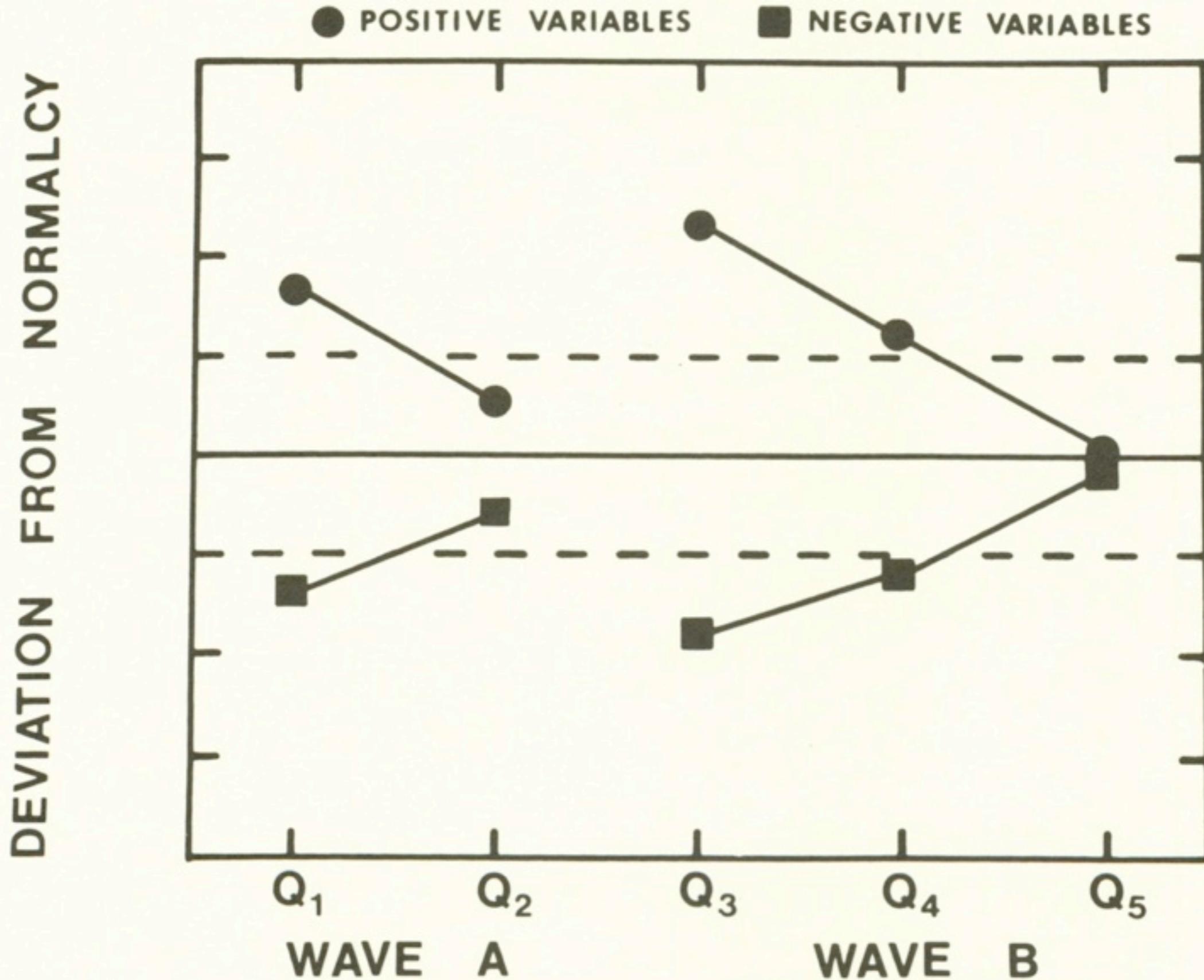


Figure 4. Average effectiveness score for positive and negative effectiveness variables of children who spent two or more quarters in a group (dash lines indicate one standard deviation from normative behavior frequencies). From Yates, Haven, and Thoresen (1979).

evaluate benefits & other outcomes

to compare the
benefits, effectiveness
of different programs

- How do you compare apples
and oranges?

... as fruit!

evaluate benefits & other outcomes

Estimating health utilities and quality adjusted life years in seasonal affective disorder research

Freed, M. C., Rohan, K. J., & Yates, B. T. (2007).
Journal of Affective Disorders, 100, 83-89

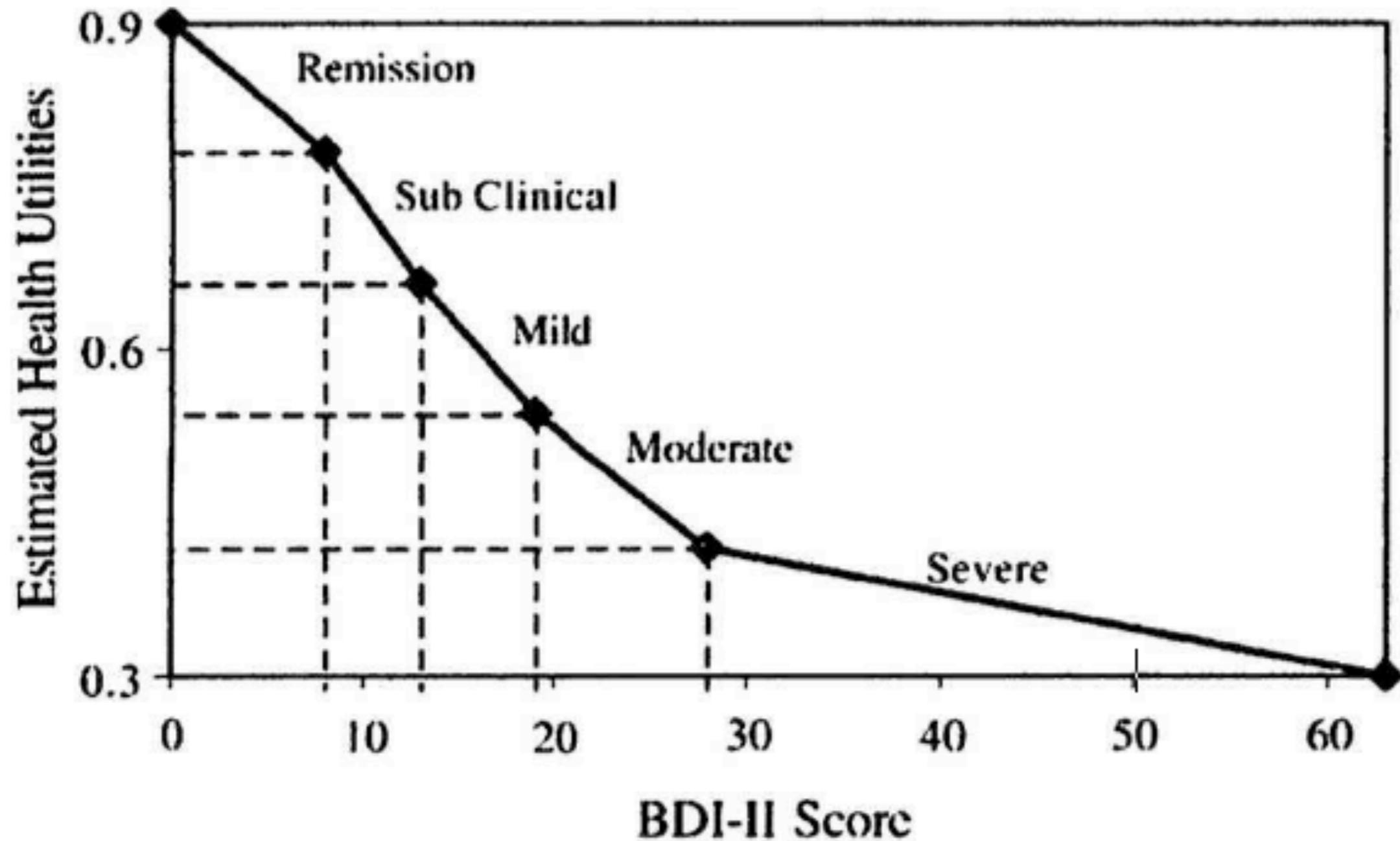
evaluate benefits & other outcomes

Quality Adjusted Life Year (QALY)

- define QALY
 - 1.00 QALY = 1 year in perfect health
 - 0.00 QALY = death
- indifference gamble: no preference between
 - 6 out of 10 chance of depression curedversus
 - 4 out of 10 chance of death

evaluate benefits & other outcomes

translate effectiveness into QALY

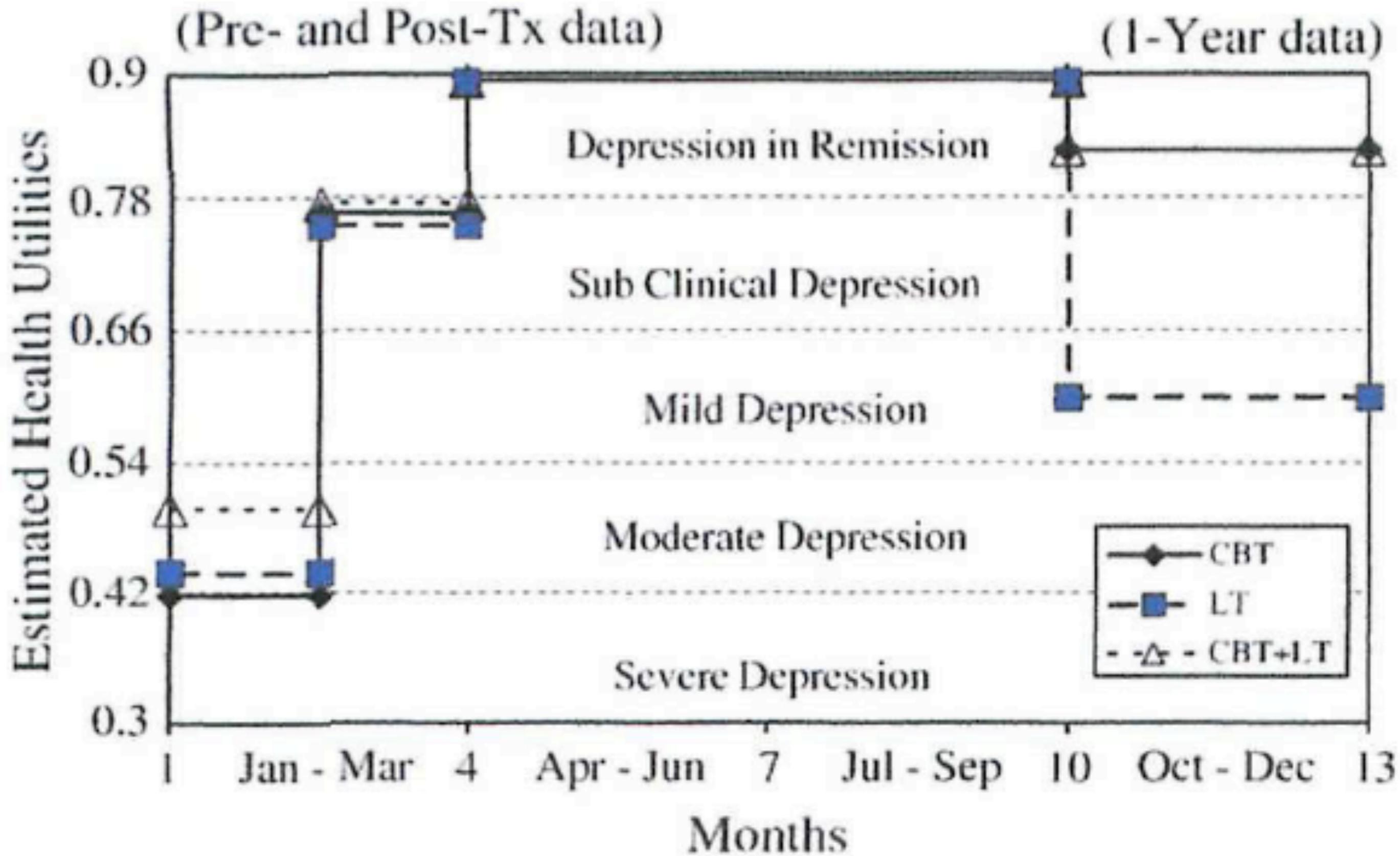


evaluate benefits & other outcomes

compare: Quality Adjusted Life Year Gained (QALYG)

- QALY Gained compared
 - Program A: 0.3 QALY
 - Program B: 0.7 QALY
 - QALYG for Program B = $0.7 - 0.3 = 0.4$

evaluate benefits & other outcomes



combine cost and outcome info

combining cost and
outcome info



“McGuire, what’s with you? Everybody else here seems to have a perfectly clear idea of what ‘cost effectiveness’ means.”

combine cost and outcome info

Cost-Effectiveness Analysis

- “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 (\$/QALY)

combine cost and outcome info

Cost-Benefit Analysis

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

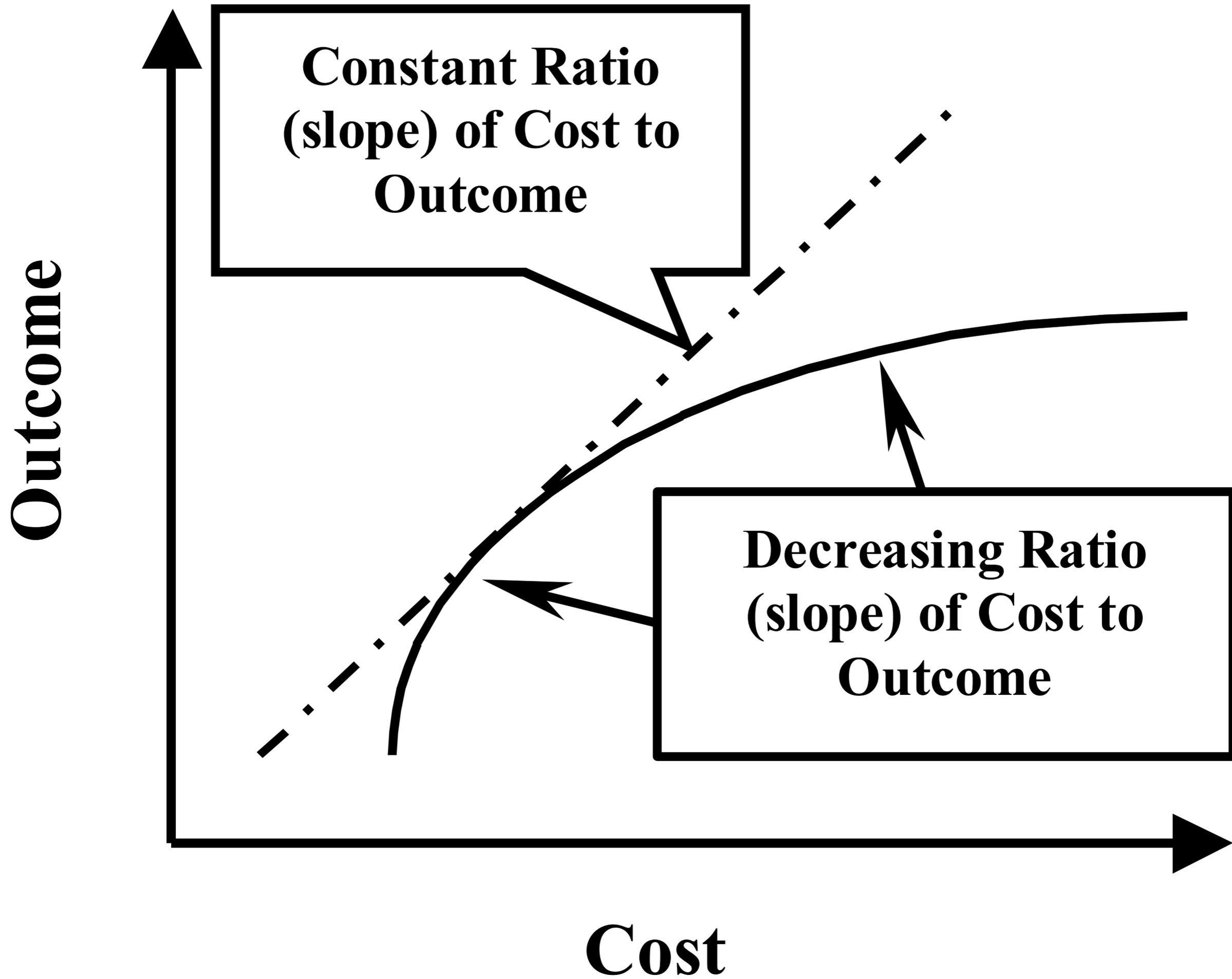
Examples:

- 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 (in terms of reduced use of Emergency Room and jail)

combine cost and outcome info

Ratio, e.g., Benefit/Cost

- 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



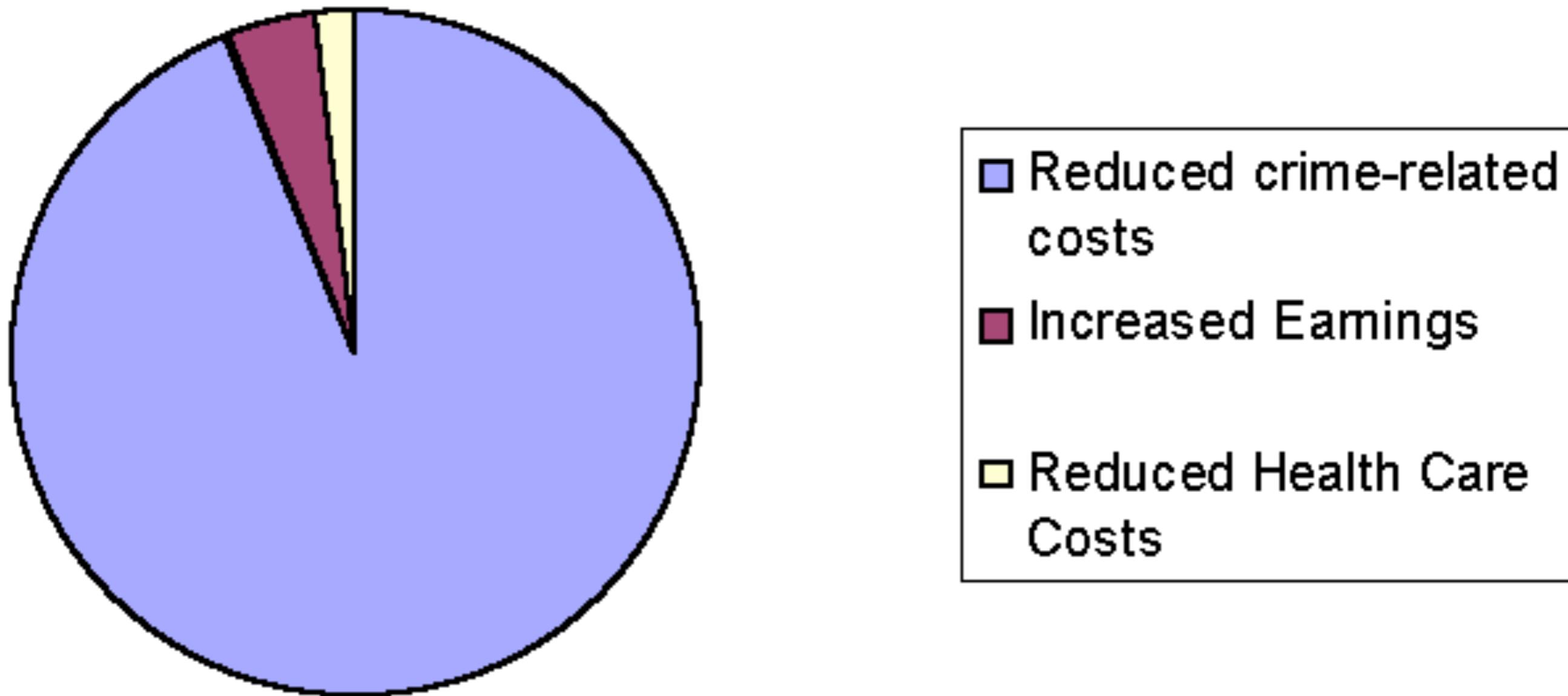
combine cost and outcome info

Costs
Benefits



combine cost and outcome info

Cost-Savings from Substance Abuse Treatment (NTIES)



If Benefits $>$ Costs?

If Benefits $<$ Costs?

combine cost
and outcome
info

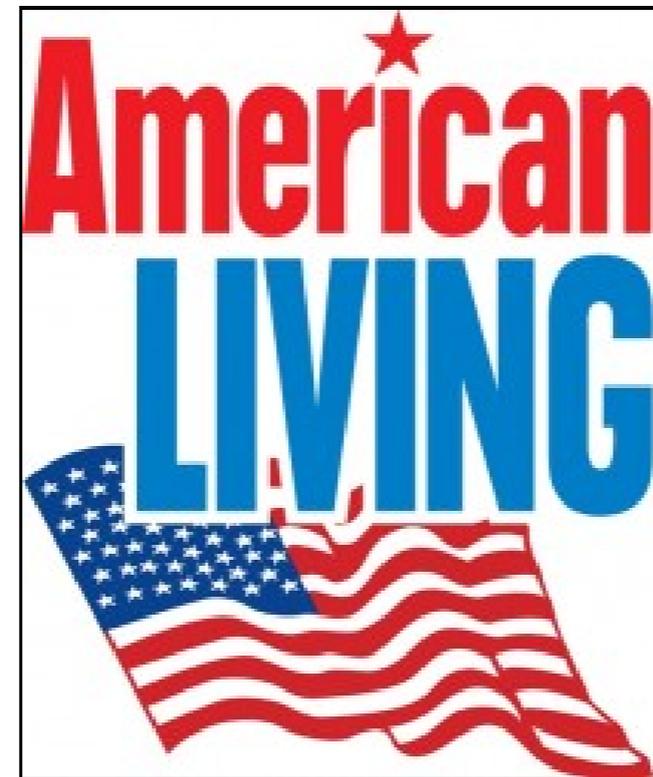


Cost Of Living Now Outweighs Benefits

APRIL 13, 2005 | ISSUE 41-15

WASHINGTON, DC—A report released Monday by the Federal Consumer Quality-Of-Life Control Board indicates that the cost of living now outstrips life's benefits for many Americans.

 ENLARGE IMAGE



"This is sobering news," said study director Jack Farness. "For the first time, we have statistical evidence of what we've suspected for the past 40 years: Life really isn't worth living."

To arrive at their conclusions, study directors first identified the average yearly costs and benefits of life. Tangible benefits such as median income

(\$43,000) were weighed against such tangible costs as home-ownership (\$18,000). Next, scientists assigned a financial value to intangibles such as finding inner peace (\$15,000), establishing emotional closeness with family members (\$3,000), and brief moments of joy (\$5 each). Taken together, the study results indicate that "it is unwise to go on living."

"Since 1965, the cost-benefit ratio of American life has been approaching parity," Farness said. "While figures prior to that date show that life was worth living, there is some suspicion that the benefits cited were superficial and misreported."

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JUNE 3, 1998

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To:

From:

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beyond just costs and outcomes

beyond costs and
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beyond just costs and outcomes

why go beyond just
costs and outcomes

beyond just costs and outcomes

Resource → Activity →

Process → Outcome

model

of a Drug Abuse Prevention

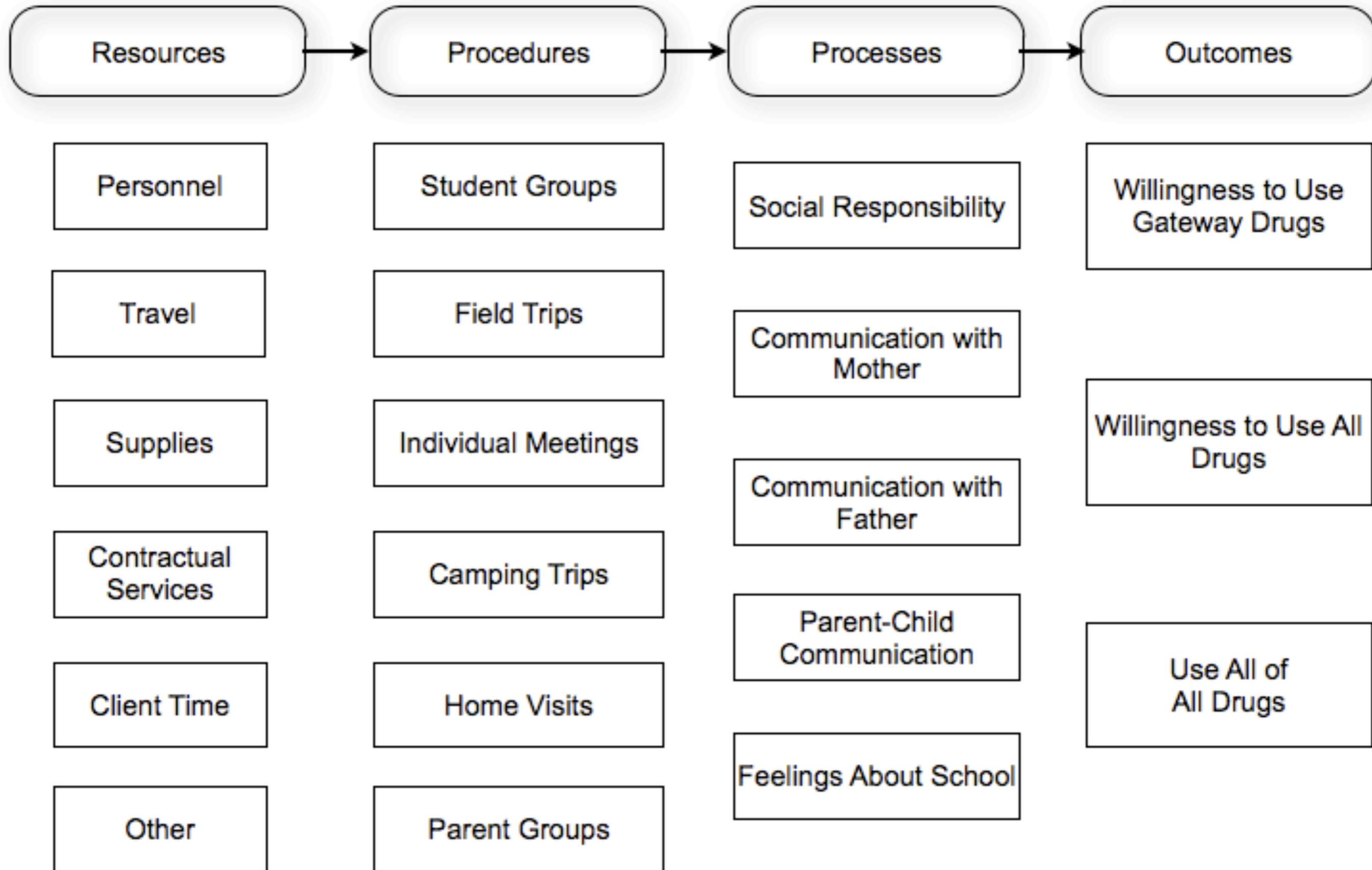
program

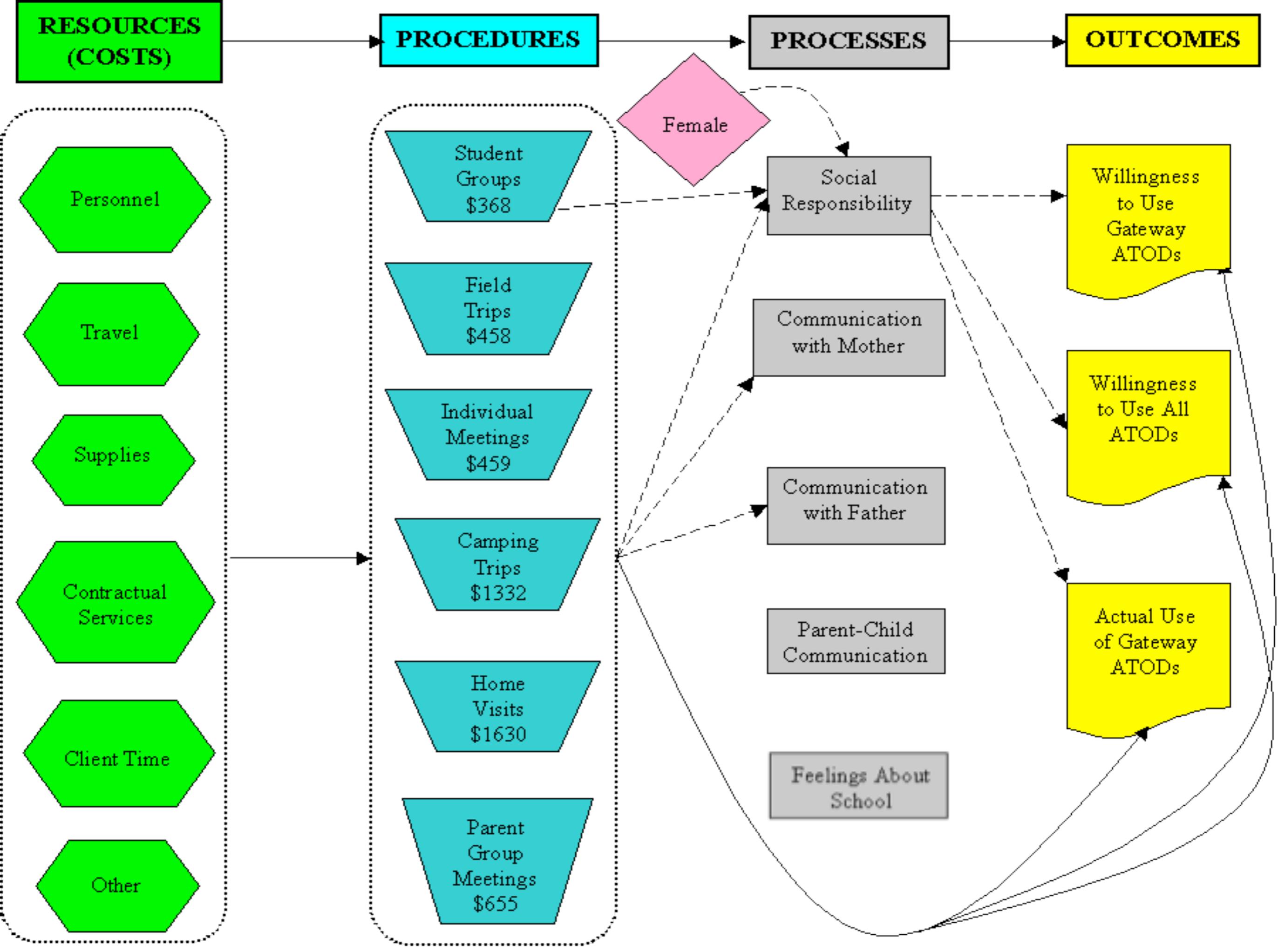
Audrey Kissel's thesis at AU

beyond just costs and outcomes

RAPO model of substance abuse prevention

beyond just costs and outcomes





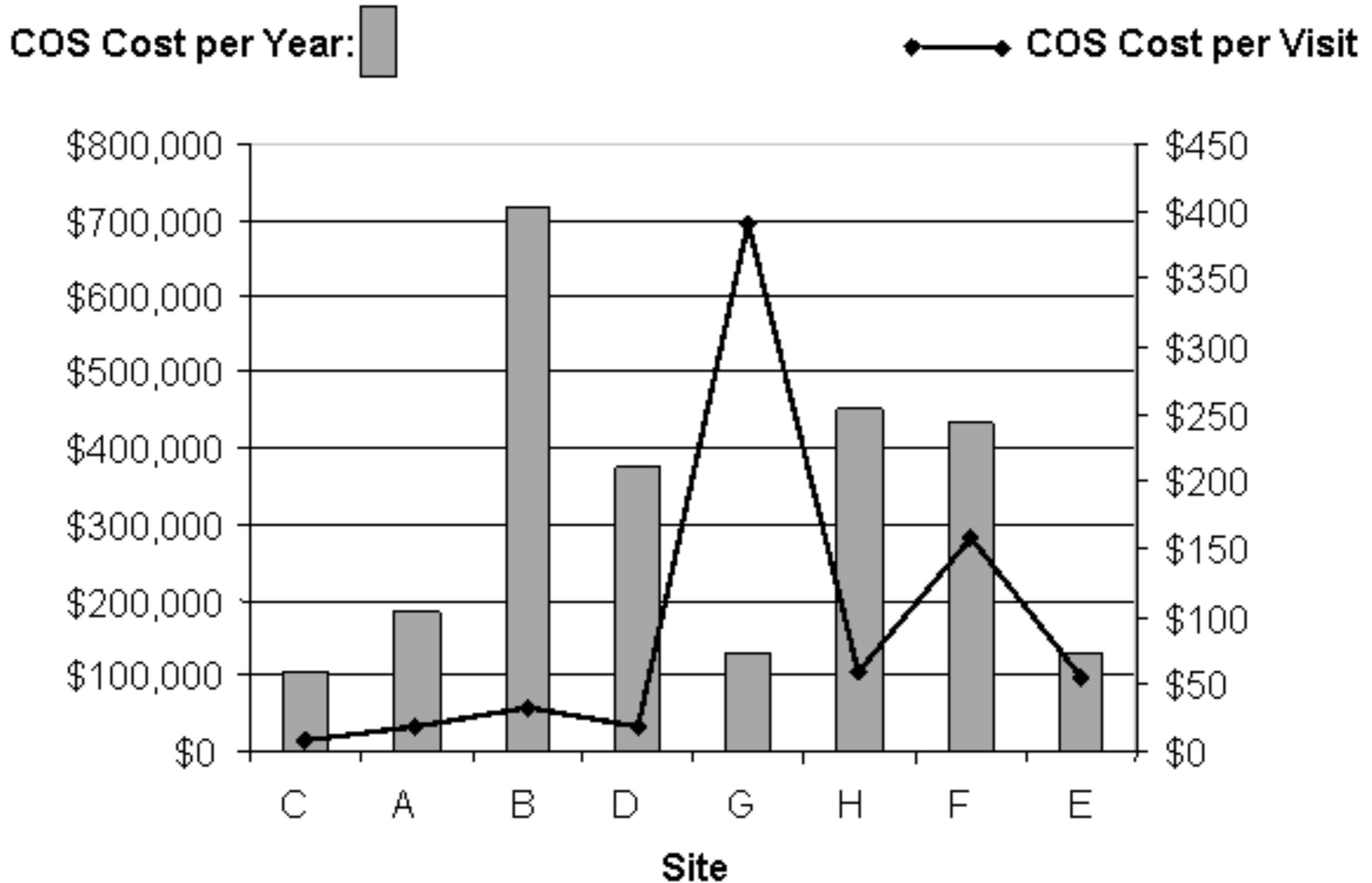
beyond just costs and outcomes

ways to go
beyond just costs and
outcomes

beyond just costs and outcomes

Consumer-Operated Services (COS) Costs

beyond just costs and outcomes



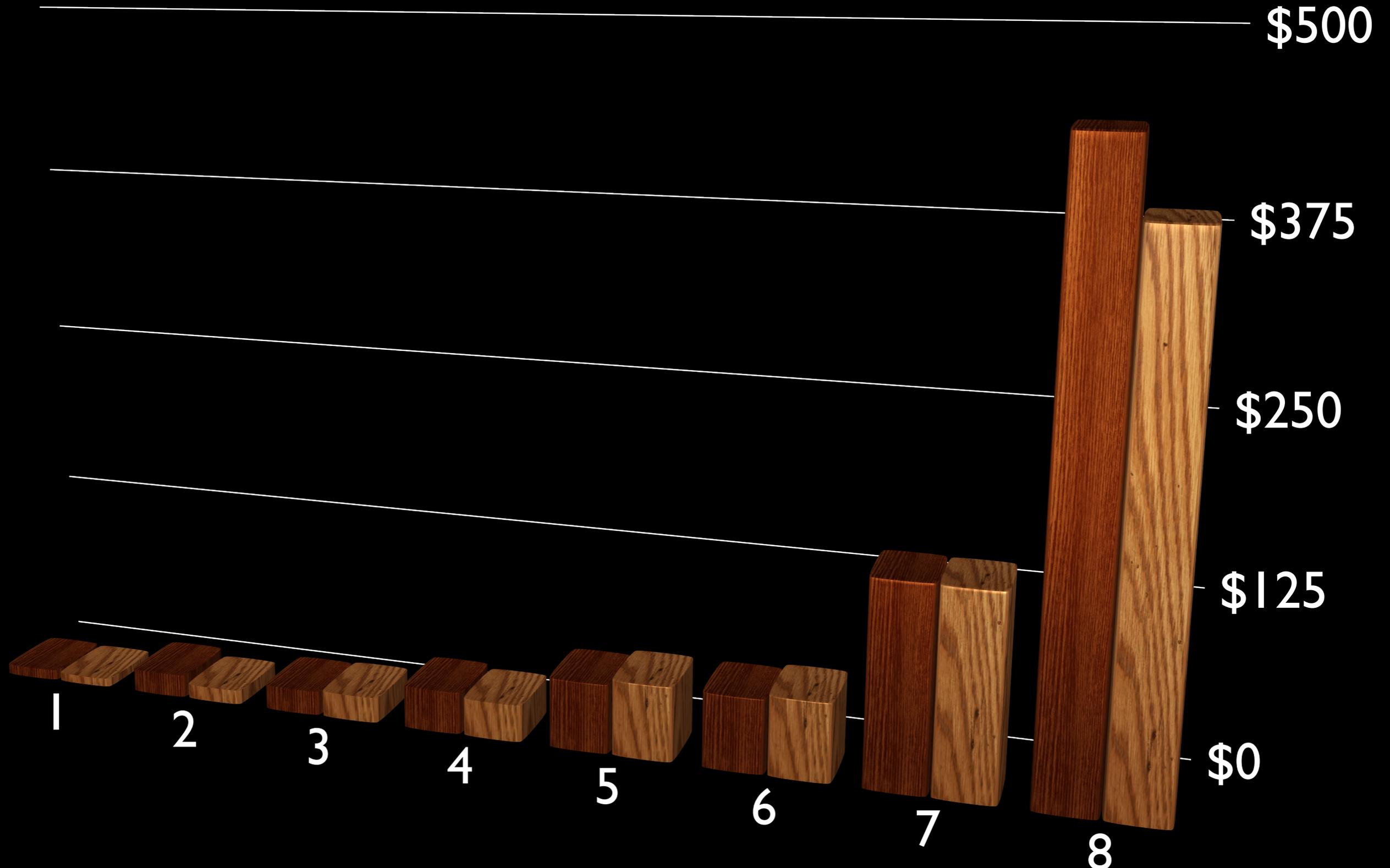
beyond just costs and outcomes

Why so much variability?

- local cost of living?
- different models?
- program size?
- volunteers, donations?
- staff pay?
- delivery system?

beyond just costs and outcomes

- Average Cost per Visit
- Adjusted Average Cost per Visit



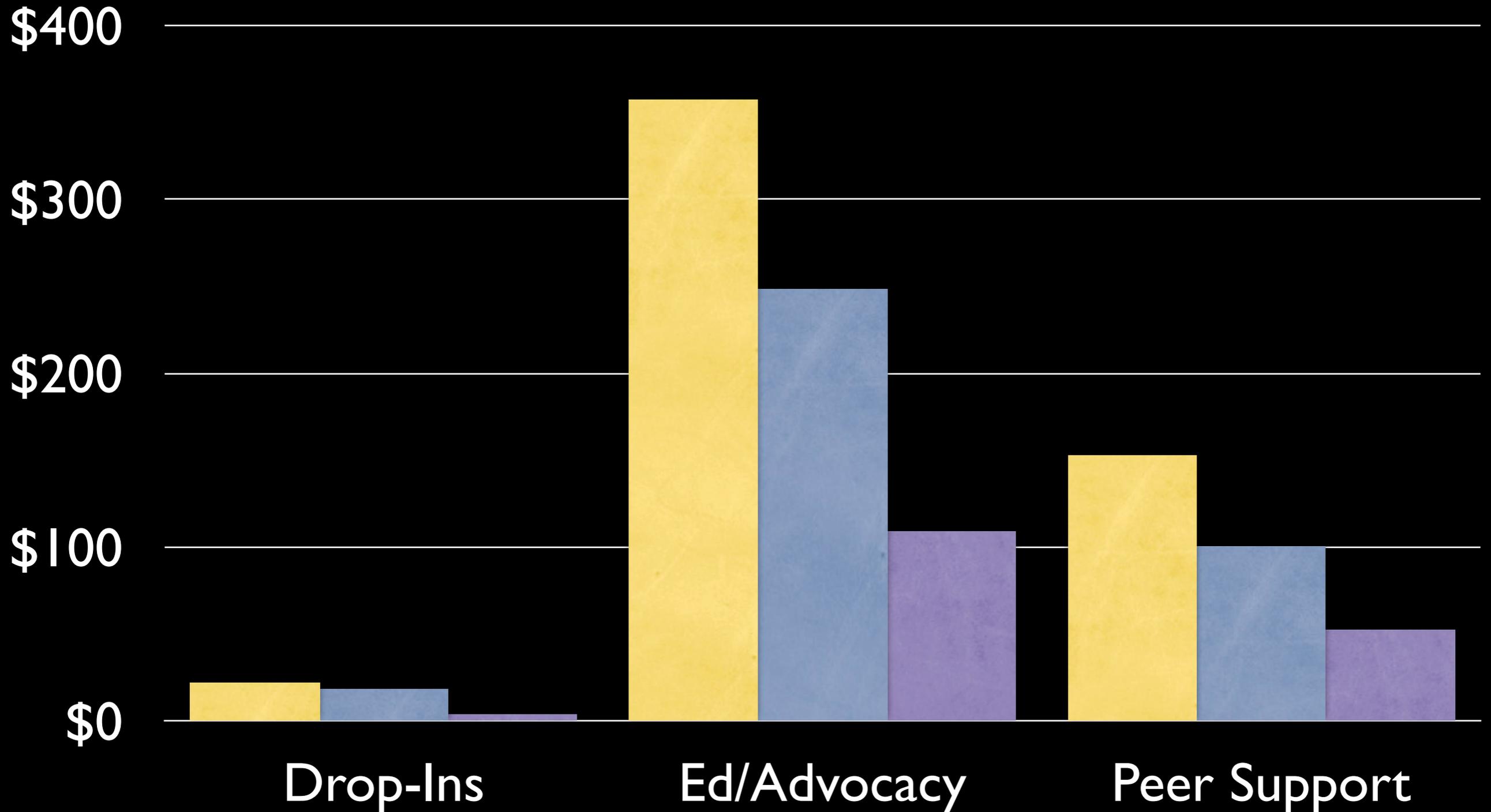
beyond just costs and outcomes

volunteers and donated resources

- time
 - peers (Consumers)
 - others
- donated space
- donated supplies, equipment, materials, transportation
- concerns about reporting these

beyond just costs and outcomes

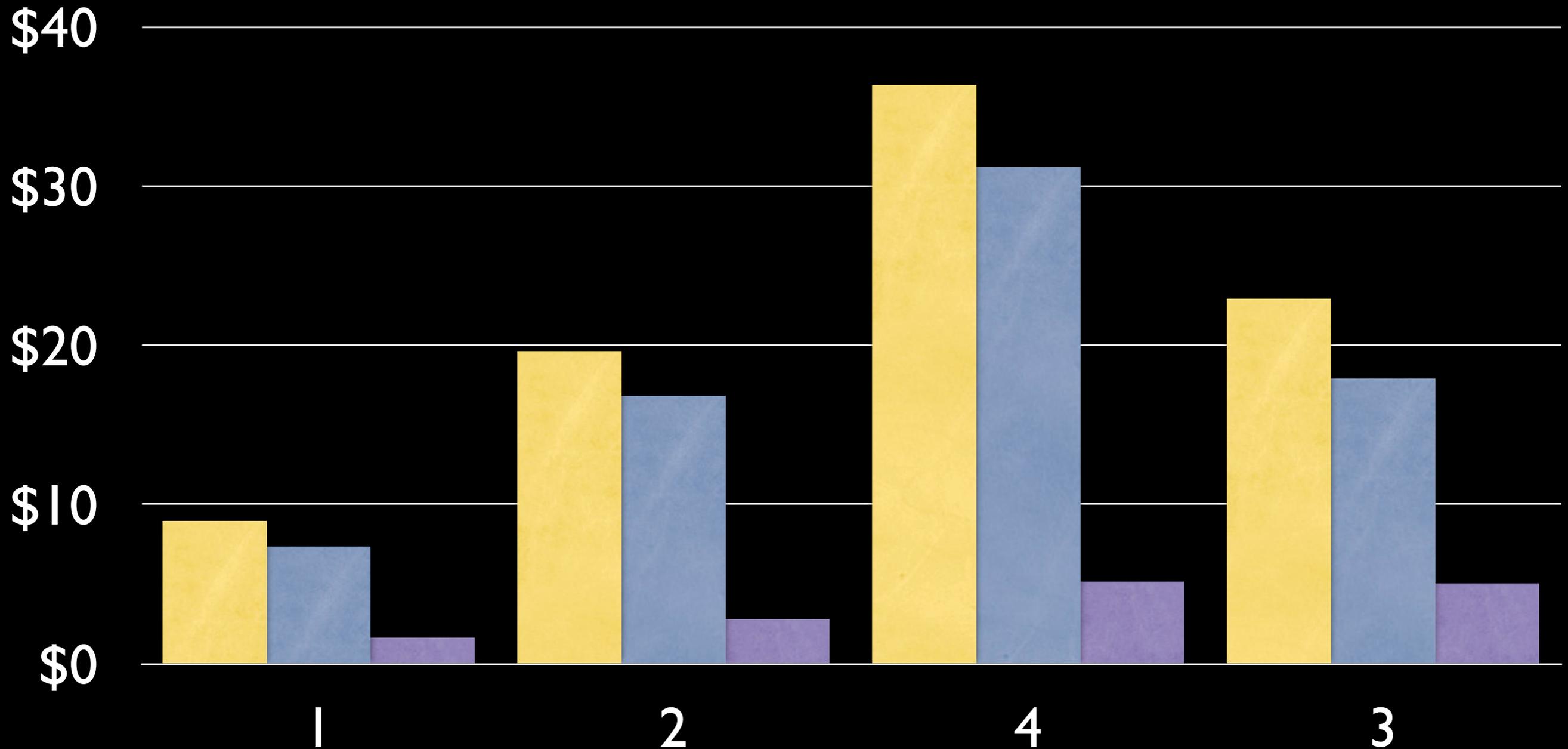
- Cost per Visit (Volunteered & Donated Added)
- Cost per Visit (Just Expenditures)
- Savings Using Volunteered & Donated Resources



beyond just costs and outcomes

Drop-In model

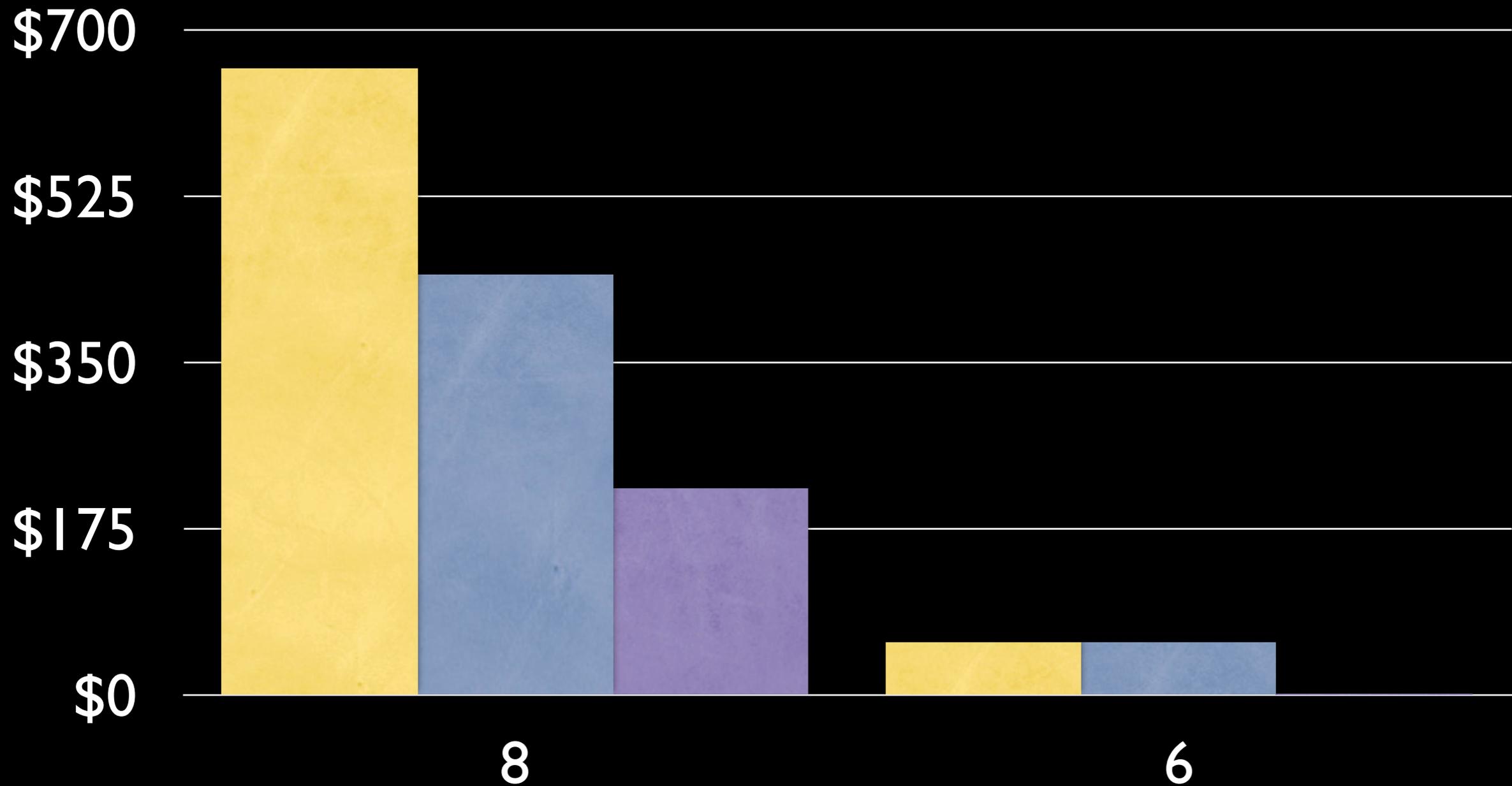
- Cost per visit (volunteered/donated resources added)
- Cost per visit (volunteered/donated resources not added)
- Savings using volunteer/donated resources



beyond just costs and outcomes

Education / Advocacy model

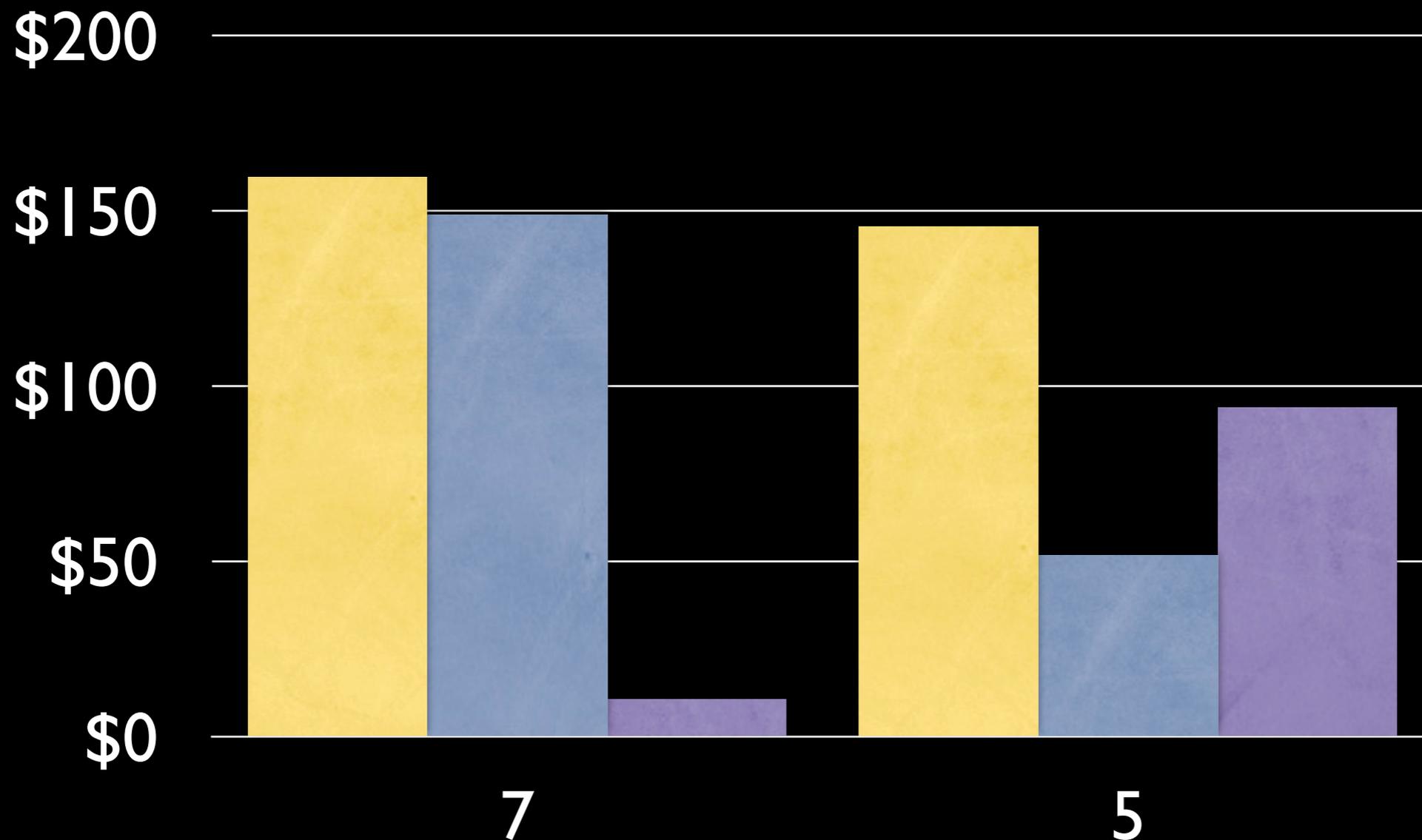
- Cost per visit (volunteered/donated resources added)
- Cost per visit (volunteered/donated resources not added)
- Savings using volunteer/donated resources



beyond just costs and outcomes

Peer Support model

- Cost per visit (volunteered/donated resources added)
- Cost per visit (volunteered/donated resources not added)
- Savings using volunteer/donated resources



learn more

References for further learning

- workshop website provides you:
- publications
- web sites
- download handouts, slides

learn more

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>

learn more

<http://archives.drugabuse.gov/IMPCOST/IMPCOSTIndex.html>

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US
National Institute
on Drug Abuse
(NIDA) manual

National Institute on Drug Abuse

**Measuring and
Improving Cost,
Cost-Effectiveness,
and Cost-Benefit
for Substance
Abuse Treatment
Programs**

National Institutes of Health

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Program Evaluation Research Lab

