

Optimal Evaluation of Services and Costs with Data and Resource Constraints: A Cross-Site Approach

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Purpose

- Pilot approaches using GPRA data to
 - Characterize programs in terms of proposed and delivered services
 - Develop individual- and program-level cost information
- Discuss benefits, limitations, feasibility, and broader interest in these approaches with evaluators and program staff

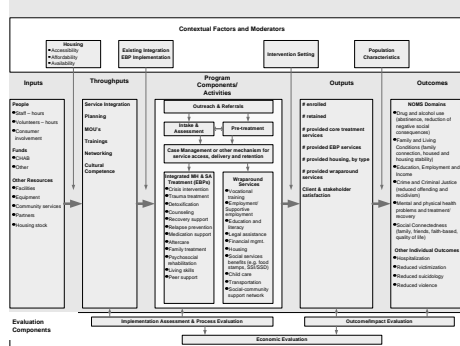
Background

- Voluntary Cross-Site Homeless Evaluator’s Group open to all homeless program grantees
 - Held two conference calls in preparation for this workshop
 - Developed and circulated a brief survey to identify potential areas of interest (e.g., measures, data systems, data collection points, model/EBPs, target population; see hand-out)

Background (con.)

- Treatment for Homeless Program logic model was developed
- Model was presented and discussed at each of the three regional evaluation workshops and refined

Treatment for the Homeless Logic Model



Background (con.)

- Limited common data and minimal resources for participating in new voluntary cross-site studies resulted in the Group considering what could be done with GPRA data
- Proposals
 - Study services using new methods developed by Lattimore et al. (2008).
 - Develop approach to cost analysis using GPRA data
- Data
 - 15 grantees submitted GPRA data for use in these pilot studies
 - Data from 14 are used for the analyses presented here
 - GPRA data for all CHAB programs

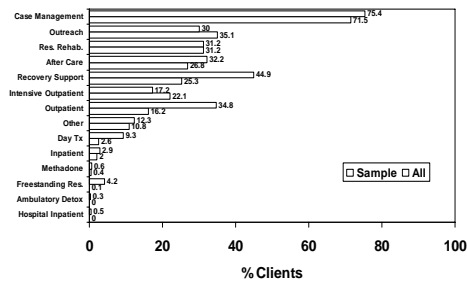
Sample Program Characteristics

- 12 current and 2 completed programs (2003-present)
- 5 South, 3 West Coast, 3 Midwest, 3 Northeast
- Subpopulations
 - 1 veterans
 - 1 women only
 - 1 men only
 - 5 chronic homeless
 - 3 shelter
 - 1 mixed (shelter, street, etc.)
 - 1 missing

Sample Program Characteristics (con.)

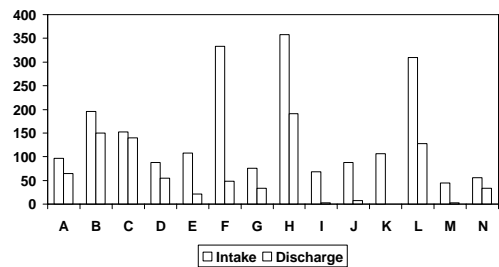
- Primary modality/treatment model
 - 5 case management (CM)
 - 5 assertive community treatment (ACT)
 - 2 modified therapeutic community (MTC)
 - 1 integrated outpatient treatment
 - 1 CBT outpatient treatment
- Primary treatment setting
 - 2 mixed residential and outpatient
 - 3 residential treatment
 - 9 outpatient
- Primary housing model
 - 4 Housing First
 - 6 linkage
 - 4 transitional with linkage to permanent

Sample versus All* Grantees: Planned Modality



*SAIS data run June 11, 2008

Numbers of Cases Reported by 14 Sample Grantees



Total intake = 2, 080; total discharge = 889

Sample versus All* Grantees: Additional Comparisons

- Sample is 60.5% male compared to 54.8% of all
- Sample is 46.4% White compared to 35.6% of all
- 16.7% of sample is on probation/parole compared to 24.6% of all
- Self-rating of health status is similar

*SAIS data run June 11, 2008

Looking Closer at Services: Service Bundles

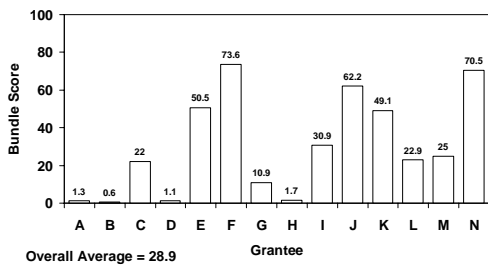
Planned Services Bundle Scores

14 programs
2,080 clients

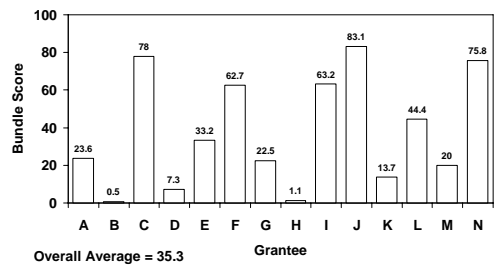
Planned Services: Average Bundle Scores

	Minimum	Mean	Maximum
SBIRT	0	28.9	100
Treatment	0	35.3	88.9
Case Mgmt.	0	24.2	88.9
Medical	0	24.2	100
After Care	0	25.4	100
Education	0	32.2	100
Peer-to-Peer	0	35.7	100

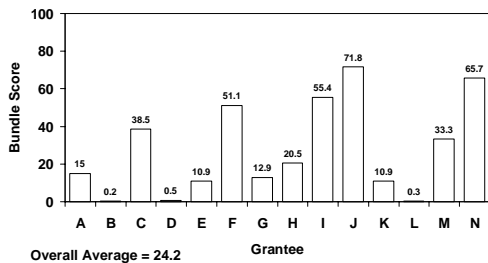
SBIRT Planned Services (Number of Services = 4)



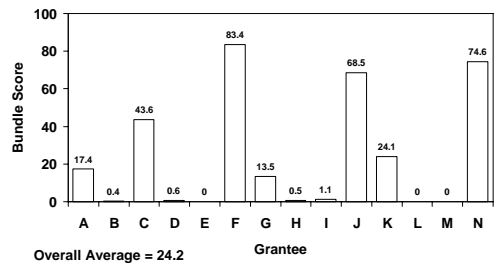
Treatment Planned Services (Number of Services = 9)

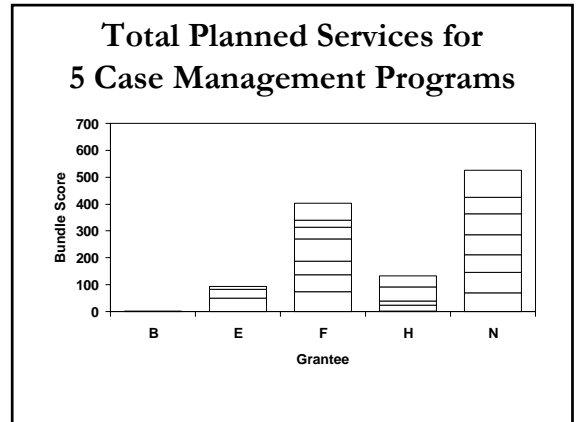
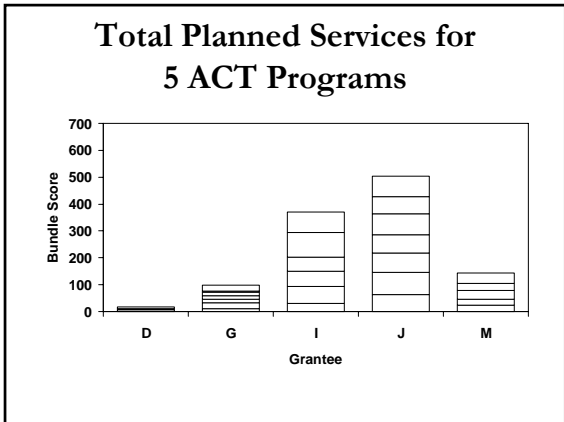
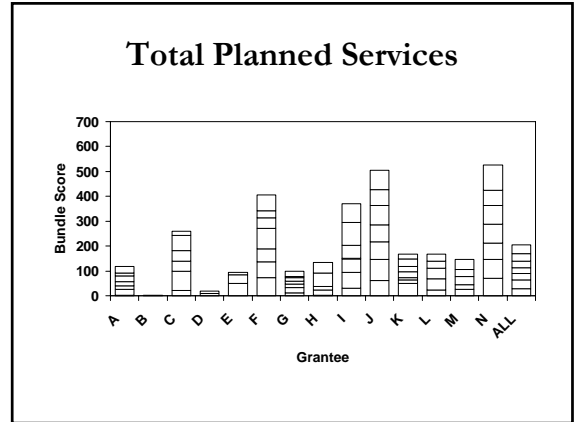
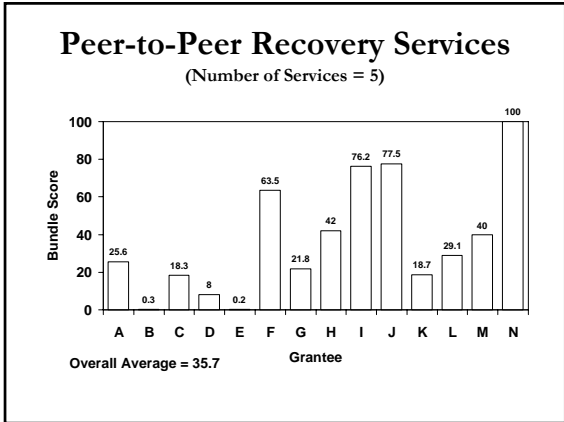
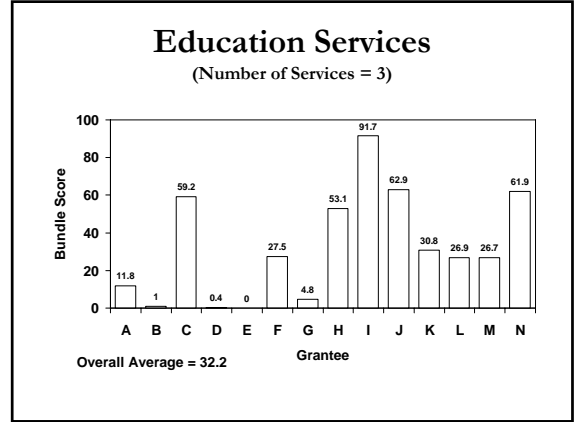
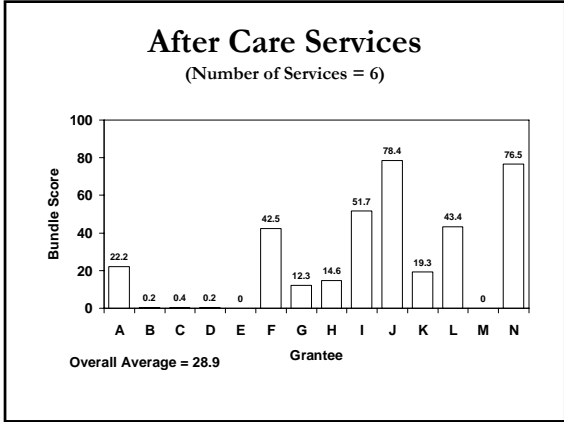


Case Management Services (Number of Services = 9)



Medical Services (Number of Services = 4)





Received Services Bundle Scores

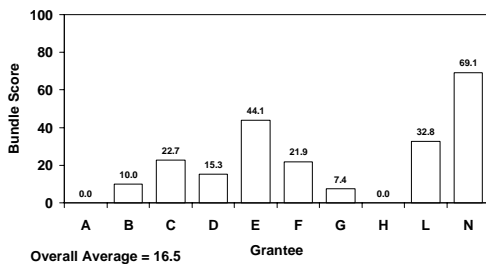
10 programs
878 clients

Received Services: Average Bundle Scores

	Minimum	Mean	Maximum
SBIRT	0	16.5	100
Treatment	0	29.1	88.9
Case Mgmt.	0	14.1	66.7
Medical	0	15.9	100
After Care	0	8.7	83.3
Education	0	33.6	100
Peer-to-Peer	0	20.1	100

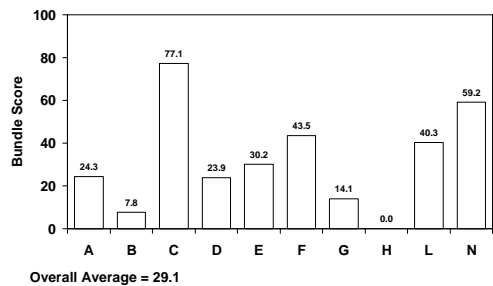
SBIRT Service Receipt

(Number of Services = 4)



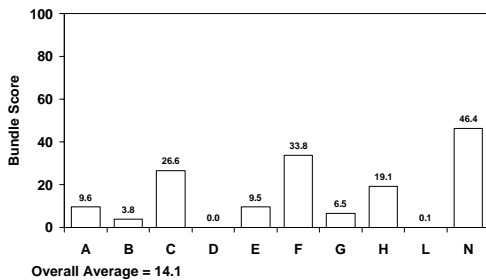
Treatment Service Receipt

(Number of Services = 9)



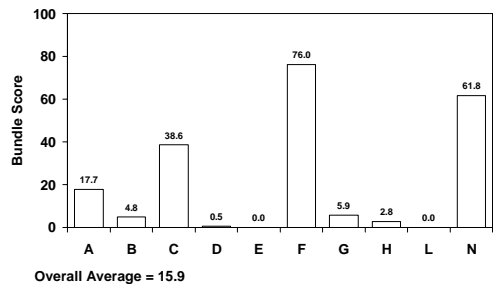
Case Management Service Receipt

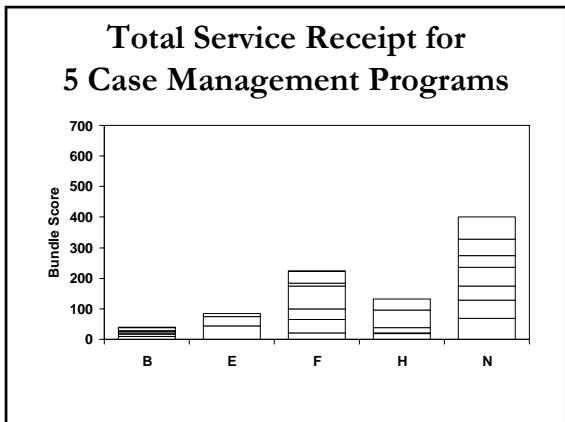
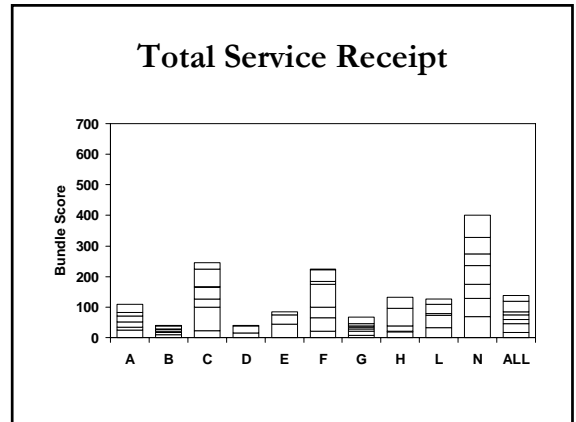
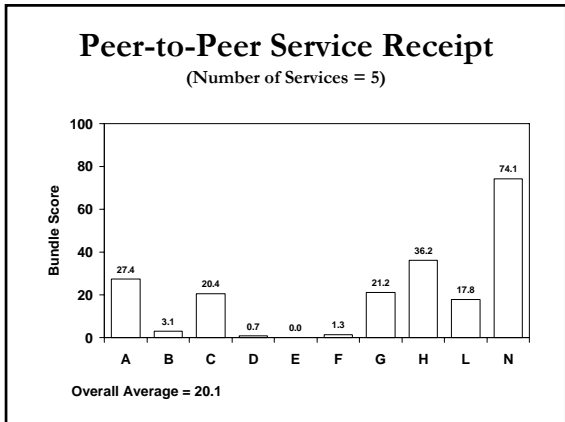
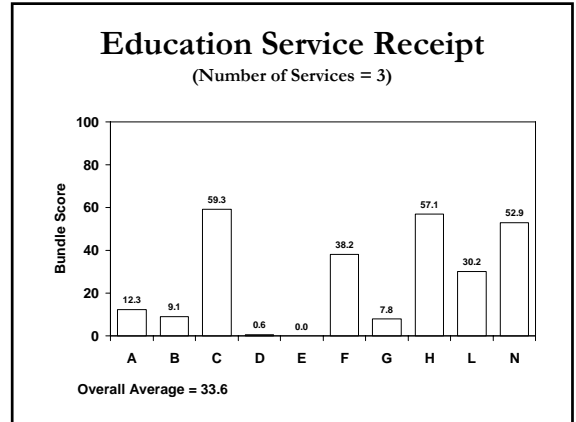
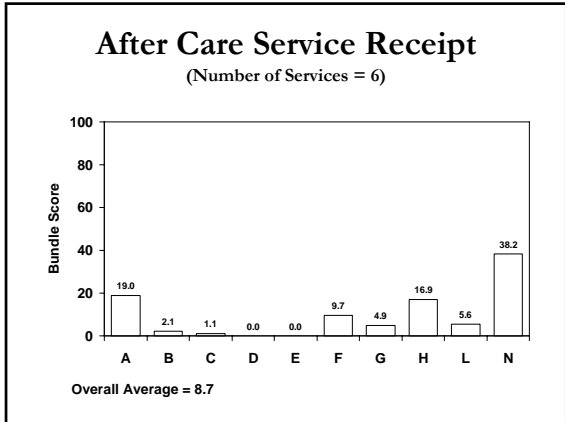
(Number of Services = 9)



Medical Service Receipt

(Number of Services = 4)





SBIRT Planned & Received

(Number of Services = 4)

Number Services Planned	Number Services Received by Client (More than Planned →)					
	0	1	2	3	4	Total
	0	441	111	32	4	592
Fewer than Planned	1	16	139	30	1	186
	2	6	19	30	6	61
	3	6	1	5	20	32
	4	0	1	0	0	1
Total		469	271	97	31	872

Treatment Services Planned & Received (Number of Services = 9)

Number Services Planned	Number Services Received by Client (More than Planned →)							Total
	0	1	2	3	4	>=5		
0	365	11	19	20	65	37	517	
Fewer than Planned	1	6	6	34	8	4	3	61
	2	0	0	0	0	0	0	0
	3	0	1	4	18	2	0	23
	4	5	1	1	3	30	1	41
	>=5	11	6	7	9	39	158	230
Total	387	25	65	56	140	199	872	

Case Mgmt Services Planned & Received (Number of Services = 9)

Number Services Planned	Number Services Received by Client (More than Planned →)							Total
	0	1	2	3	4	>=5		
0	366	32	39	23	19	6	485	
Fewer than Planned	1	12	36	11	3	1	1	64
	2	11	26	35	11	4	1	88
	3	5	13	10	9	3	1	41
	4	17	11	53	15	50	2	148
	>=5	7	2	9	6	6	16	46
Total	418	120	157	67	83	27	872	

Medical Services Planned & Received (Number of Services = 4)

Number Services Planned	Number Services Received by Client (More than Planned →)						Total
	0	1	2	3	4		
0	572	42	25	23	17	679	
Fewer than Planned	1	4	2	1	0	0	7
	2	16	20	109	2	0	147
	3	5	6	6	21	0	38
	4	1	0	0	0	0	1
Total	598	70	141	46	17	872	

After Care Services Planned & Received (Number of Services = 6)

Number Services Planned	Number Services Received by Client (More than Planned →)						Total	
	0	1	2	3	4	5		
0	534	64	33	14	8	3	656	
Fewer than Planned	1	30	4	7	2	1	0	44
	2	23	5	7	8	2	0	45
	3	45	9	1	5	2	0	62
	4	10	5	1	3	10	0	29
	5	12	5	5	6	4	4	36
Total	654	92	54	38	27	7	872	

Education Services Planned & Received (Number of Services = 3)

Number Services Planned	Number Services Received by Client (More than Planned →)					Total
	0	1	2	3		
0	307	91	54	7	459	
Fewer than Planned	1	5	91	19	0	115
	2	21	28	239	7	295
	3	1	1	1	0	3
Total	334	211	313	14	872	

Peer-to-Peer Services Planned & Received (Number of Services = 6)

Number Services Planned	Number Services Received by Client (More than Planned →)						Total	
	0	1	2	3	4	5		
0	311	78	16	17	4	0	426	
Fewer than Planned	1	29	168	9	1	0	0	207
	2	12	29	25	9	8	0	84
	3	8	11	44	13	5	0	81
	4	9	5	7	3	14	0	38
	5	5	2	1	5	7	16	36
Total	374	293	102	48	38	17	872	

So....

- Bundle scores provide a way to characterize and compare programs that may include many different types of services
- Pilot data show that there is considerable variability across the 14 programs in terms of services planned and provided to clients

Economic Analysis

Economic Analysis Goals

- Use GPRA data to
 - Inform program strategies given limited resources
 - Describe the potential value of the program to community stakeholders
- Approach
 - Cost service bundles
 - Value program outcomes (benefits)

Goal 1: Costing Service Bundles

- Service bundles vary by program model and client characteristics
- Different combinations of types and amounts of services require different resources
- By estimating the costs of providing typical service bundles to different client types, a program can better manage resources

Costing Service Bundles (con.)

- For example, cost analysis will further understanding of the tradeoffs of pursuing different outreach strategies
- Different outreach strategies may enroll clients with different needs
- Knowing the relative costs of different service bundles means programs can better anticipate costs associated with outreach

Example:

Individual and Group Counseling

- Pooled services across all programs
- 5 programs provide both services to at least 16 clients

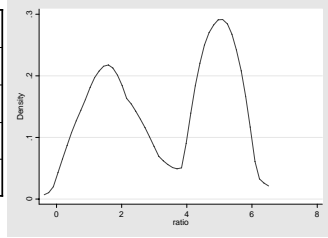
		Individual Counseling	
		NO	Yes
Group Counseling	NO	203	8
	Yes	14	303

Example:

Individual and Group Counseling

- Ratio of Experienced Group Sessions to Individual Sessions

Mean	3.4
Median	3.7
St. Dev	1.8
Min	.1
Max	6.0



Service Cost Analysis Procedure

- Analyze service bundles
 - Are there patterns?
 - Can you link bundles to types of clients?
 - Identify key services that vary across client characteristics
 - Use statistics or your own knowledge of your program to identify those characteristics

Service Cost Analysis Procedure (con.)

- Determine the resources required to provide one unit of each service
- Identify activities required for the service
 - Q: Count resources needed for each activity per person (be careful with group sessions)
 - e.g., individual counseling session: one hour of one counselor's time
 - P: Apply a price to the resource, e.g., counselor's wage

Service Cost Analysis Procedure (con.)

- Developing these costs should not require a lot of program resources
- Estimates of costs can be crude but still be very useful
- What is important is that you measure services the same way
- The relative costs are what are important!

Service Cost Analysis Procedure (con.)

- Multiply P x Q to get the cost of providing a unit of service
- Calculate the average service cost for each client type

$$=$$

(average number of individual counseling sessions multiplied by the cost per session)

$$+$$

(the average number of group sessions attended multiplied by the cost per person in a group session)
- Compare the service bundles to know what costs to expect for different types of clients

Goal 2:

Valuing Program Outcomes/Benefits

- Evaluators quantify improvements in many client outcomes that are associated with program services
- Many outcomes are benefits not just to the client but to the community
- Linking cost estimates to these outcomes is what is considered the "Benefit" part of a Cost Benefit Analysis

What Can Be Done with GPRA Data?

- Changes in outcomes between baseline and follow-up can be calculated
- Caveat: Without comparison samples, these ‘benefits’ cannot be strictly attributed to the program
- Improvements in outcomes are nonetheless suggestive of an overall increase in value for the clients and the community and are worth analyzing

What Can Be Done with GPRA Data? (con.)

- Perspective is crucial to any discussion of benefits or costs
 - Whose benefits are being analyzed?
- Societal versus taxpayer versus community stakeholder perspectives
 - Deciding what costs and benefits to analyze and how they are valued are often very difficult, e.g.,
 - Crimes and victim costs
 - Federal and State resources
 - Grasshoppers in Georgia
- Be clear about whose benefits and how they were valued

Simplest GPRA Domains for Benefits Analysis

- Health Care Utilization
 - Visits to EDs and clinics
 - Inpatient nights
- Criminal Outcomes
 - Arrests, nights in jail, monitoring
- Economic Outcomes
 - Employment and wages
- Limited Community Stakeholder Perspective
- Straightforward monetary valuations
- Note: ‘benefits’ are often avoided costs, e.g., fewer arrests.

Difficult GPRA Domains for Benefits Analysis

- Difficult to value and difficult to identify who benefits
 - Substance use
 - Mental health
 - Housing
 - Social Connectedness
- What is monetary value of abstinence from drinking?
 - Cannot monetize the client’s happiness
 - Benefits to the community are best estimated by concrete secondary outcomes like health care use and criminality
- Improvements in all GPRA domains are meaningful on their own and should be shared with stakeholders in their primary units

Benefits Analysis Procedure

- Measure improvements in outcomes
 - Perhaps as part of broader evaluation
- Decide perspective and which outcomes to monetize as benefits
 - Why are you doing it?
 - Who will be interested in the numbers?
- Attach monetary value to the outcomes
 - Unit values, e.g., average cost of an emergency department visit

Sources of Unit Monetary Values

- Stakeholders
- Literature-based estimates

French, M.T., & Martin, R.F. (1996). The costs of drug abuse consequences: A summary of research findings. *Journal of Substance Abuse Treatment*, 13(6):453-466.

Miller, T.R., Levy, D.T., Cohen, M.A., & Cox, K.L. (2006). Costs of Alcohol and Drug-Involved Crime. *Prevention Science*, 7(4):333-42.

Roebuck, M. C., French, M. T., & McLellan, A. T. (2003). DATStats: Results from 85 Studies Using the Drug Abuse Treatment Cost Analysis Program (DATCAP). *Journal of Substance Abuse Treatment* 25(1):51–7.

Stephan, J.J. (2004). State prison expenditures, 2001 (Tech. Rep. No. Bureau of Justice Statistics Special Report, NCJ 202949). Washington, DC: Bureau of Justice Statistics (1-9).

Zarkin, G.A., Dunlap, I.J., Hicks, K.A., & Mamo, D. (2005). Benefits and Costs of Methadone Treatment: Results from a Lifetime Simulation Model. *Health Economics*, 14(11):1133-1150.

Unit Cost Estimates

- Be careful!
 - The unit cost estimates may not fit your perspective and your goals. For example,
 - Arrests may include victim costs
 - Must compare apples to apples.
 - Average hospital stay in the literature may be very different from the average hospital stay experienced by your clients.
 - Avoid double counting.
 - Some literature includes jail nights and court costs in the cost of an 'arrest'

Example Cost Estimates

- Small selection of literature most appropriate for this narrow and specific perspective
- May not be appropriate for other studies

Variable (Source Name)	Unit Cost (2008 \$)	Source
Hospital Night	1449	French & Martin (1996)
Hospital Night (MH/SA specific)	1,348	French & Martin (1996)
Nights in Other MH/SA Tx Facility	131	Roebuck, French & McLellan (2003)
Emergency Department Visit	721	French & Martin (1996)
Other Health Care (Outpatient/Counseling)	129	French & Martin (1996)
Other Health Care (MH/SA specific)	86	French & Martin (1996)

Example Cost Estimates

- Small selection of literature most appropriate for this narrow and specific perspective
- May not be appropriate in other studies

Variable (Source Name)	Unit Cost (2008 \$)	Source
Arrests		
DUI	3,088	Miller, Levy, Cohen & Cox (2006)
Other Traffic	3,088	Miller, Levy, Cohen & Cox (2006)
Public Drunkenness	3,088	Miller, Levy, Cohen & Cox (2006)
Assault	8,590	Miller, Levy, Cohen & Cox (2006)
Motor Vehicle Theft	9,227	Miller, Levy, Cohen & Cox (2006)
Burglary	4,769	Miller, Levy, Cohen & Cox (2006)
Robbery	12,655	Miller, Levy, Cohen & Cox (2006)
Unspecified	3,088	Miller, Levy, Cohen & Cox (2006)
Jail Night	75	Stephan (2004)
Court Appearance (Arraignment)	698	Zarkin (2005)
Court Appearance (Sentencing)	970	Zarkin (2005)
Month of Monitoring	312	Zarkin (2005)

Conclusions

- GPRA data can be used to develop a set of measures that will allow cross-site program comparisons (program-level bundle scores) or within program comparisons (bundle scores could be calculated for specific client subpopulations)
- Cost data applied to bundle scores can provide programs useful information on the relative costs of serving specific client populations or attaining specific outcomes