Implementation Costs of SBI for Illicit Drug Use

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The ASPIRE Study

- Randomized clinical trial comparing two models of BI for decreasing drug use and consequences in a primary care setting
- Conducted in Boston, MA.
  - Boston Medical Center conducted all data collection and delivered all interventions
  - RTI are collaborators involved with the cost and cost-effectiveness study aims
- Funding:
  - National Institute on Drug Abuse, National Institutes of Health; Grant R01 DA025068. (Richard Saitz, PI)

Study protocol

- Integrated into a larger SBIRT program
- Health promotion advocates (HPA's) used the ASSIST to screen clients within the clinic
- Based on randomization, patient receives:
  - Control group: information-only
  - Standard intervention: SBIRT-model BI with an HPA, provide as part of the Massachusetts Screening, Brief Intervention, and Referral to Treatment grant (MASBIRT)
  - Enhanced intervention: more intensive BI from an MI-trained counselor with a follow-up booster session

Need for cost studies on SBI

- A lack of understanding about program implementation costs can act as a barrier to widespread dissemination and implementation
- Because SBI is a relatively newer service, it does not have an administrative cost basis as do more traditional health services
- Use clinical trials to examine costs
  - Usually included as a part of efficacy/effectiveness studies in peer-review journals
  - Details about cost methodologies are often sparse
  - With limited information its difficult to compare costs and to understand their variation

Approaches for a cost evaluation

- Perspective – who bears the burden or is the relevant stakeholder?
  - Societal
  - Provider
  - Payer
  - Patient
- Method – how to measure price and quantity inputs?
  - Activity-based – measure individual activities and sum across activities
  - Non-activity-based - measure total program cost and divide by # of people receiving service
  - Hybrid - a mix of activity- and non-activity-based methods

ASPIRE costing methodology

- Perspective – payer and provider
  - Integration into a large, primary health system
  - Impacts of program costs on operating budgets
  - Are program costs sustainable given funding levels (e.g. grants) or expectations (e.g. insurance)?
- Method – hybrid
  - Activity-based: direct service delivery
  - Non-activity-based:
    - Support and administrative activities synonymous with MASBIRT
    - Attempt to allocate costs as they might occur in the absence of MASBIRT

Cost algorithm for activity-based elements

COST = P * Q

	P = Price estimate	**Q = Resource Estimate**
Labor	Wage	Service delivery time
Materials	Price per copy	Number of copies
Space	Price per square foot	Room size

Cost inputs - labor

- Wages (P)
  - HPA: salary information from MASBIRT administrative records (~$20/hour)
  - Counselors: Counselors are graduate students and not paid market wages, so used national estimates of the median counselor wage in the Boston area (~$34/hour)
- Service delivery time (Q)
  - Screen - Quasi-time-in-motion data collection for a sample of screens
  - BI-S and BI-E: Time-stamped recordings for all intervention sessions

Cost inputs – materials and space

- Materials –MASBIRT administrative records (P & Q)
- Space
  - Price per square foot (P): estimates from a national real estate firm
  - Exam room size (Q): 10x10 ft. room
    - Used in the literature
    - Verified by study team

Preliminary time estimates by activity, in minutes

	25th percentile	Median	Mean	75th percentile
Screen (1st part)	1.55	1.78	1.90	2.13
Screen (2nd part)	0.47	1.33	1.85	2.53
BI-S	10.25	13.75	14.12	17.1
BI-E (1st session)	32.27	38.83	37.24	44.12
BI-E (booster)	16.88	28.66	25.99	34.54

Preliminary costs for activity-based elements by service time estimate

	25th percentile	Median	Mean	75th percentile
Screen (1st part)	$0.97	$1.07	$1.12	$1.21
Screen (2nd part)	$0.60	$0.96	$1.18	$1.46
BI-S	$4.54	$6.00	$6.16	$7.41
BI-E	$ 24.50	$30.99	$29.45	$35.55

Consideration #1: Are activity-based costs truly indicative of real-world practice?

- Costs for screening and intervention “activities” are on the lower end of what the literature says alcohol SBI cost
- Activity-based costs can understate costs
  - More likely to capture direct program activities
  - More likely to omit administrative and frictional costs

Consideration #2: Are fixed/quasi-fixed costs generalizable to SBI delivery?

- Non-activity-based costs can overstate costs
  - More likely to capture frictional and administrative costs
  - More likely to include irrelevant costs to service delivery
- How to best and most accurately allocate fixed and quasi-fixed costs?
  - Daily costs – clinical supervision and start-up for a clinic session
  - Annual costs – IT system, staff training, etc.
  - Including fixed/quasi-fixed will increase cost of SBI delivery

Solution: Present both

- Next step is to fully vet an algorithm for
  - Fixed/quasi-fixed costs
  - Other relevant costs that cannot be measured on an activity-based level
- Determine a full service delivery cost - everyone wants to see cost per screen
- Provide a "menu" that allows other payers and providers to compare relevant activities and costs for their own context