

Budget Impact Analysis Methods Development for QUERI Projects

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Project goal

- To produce a white paper that advances the methodological base for using budget impact analysis (BIA) methods in Quality Enhancement Research Initiative (QUERI) projects
- Particular focus: to develop guidance for estimating the cost of implementation of evidence-based interventions

CyberSeminar objectives

- To explain the purpose of a budget impact analysis (BIA)
- To provide examples of BIA methods that highlight key elements that can be applied to Quality Enhancement Research Initiative (QUERI) projects
- To offer recommendations for applying BIA methods to better fit the needs of QUERI implementation projects

Poll question: What is your primary role where you work? (pick one answer)

- Clinician
- Operations
- Research
- Other

Poll question: Have you ever worked on a study that included a budget impact analysis? (pick one answer)

- Yes
- No
- Don't know
- Haven't worked on a research project

Project rationale

- What is QUERI?
 - The VA Quality Enhancement Research Initiative (QUERI) was launched in 1998 as part of a system-wide transformation aimed at improving the quality of healthcare for Veterans
- Why is BIA important to QUERI?
 - QUERI implements research findings and innovations into routine clinical practice
 - Key issue for many implementation frameworks is cost or budget impact

What is budget impact analysis (BIA)?

- BIA is a type of economic evaluation that is used to assess the expected short-term changes in expenditures for a health care organization or health care system after adopting a new intervention (Sullivan et al 2014)
- BIA results provide essential information for health care administrators and payers about the affordability of new interventions
- BIA results can be used for budget or resource planning

BIA versus CEA

- Cost-effectiveness analysis (CEA) is commonly used when comparing the costs and health benefits of a new intervention to another intervention
 - BIA doesn't require a comparison intervention
 - BIA typically involves comparison to existing practice
- BIA & CEA should be conducted when reasonable evidence of potential efficacy or effectiveness of an intervention exists
 - BIA doesn't require effectiveness data
- BIA can be conducted alone or alongside a CEA

BIA versus CBA

- Cost-benefit analysis (CBA) identifies the net monetary benefits (or costs) associated with an intervention
- Return on investment (ROI) analysis is a type of CBA that reports net benefit or net cost as a percentage
- BIA is usually more appropriate than CBA because
 - Stakeholders are most interested in short-term costs of the intervention
 - BIA can be conducted without explicitly considering all of the economic benefits of the intervention being adopted

Key BIA elements

- Most valuable when an intervention is being translated from research into practice or scaled out
- Involves estimating costs associated with
 - Interventions
 - Changes in staffing and use of technology
 - Changes in the number of patients receiving the new (or already existing) intervention
- Also involves estimating short-term savings
- End result: determining the total expenditures associated with adopting a new intervention
- Always conducted from the perspective of the organization that will be paying for the intervention

What costs where?

Audience	Type of analysis	What costs
Patients, providers, payers, policy makers	Cost identification	Intervention costs
Payers, providers, policy makers	Budget impact	Above plus: Implementation costs VA utilization
Payers, policy makers, society	Cost-effectiveness, cost-utility	<i>All Above plus:</i> Non-VA utilization Travel costs Caregiver costs Indirect costs/overhead

White paper methods

- PubMed search to identify published BIAs in VA settings
 - “budget impact analysis” & “US Department of Veteran Affairs” yielded only 2 references
 - Added more search terms (e.g., budget case analysis, cost savings, economic evaluation), identifying 68 papers
- Inclusion criteria
 - BIA was main or complementary component to a CEA
 - Paper was original research (i.e., not a review article)
- Papers included in review = 23
 - All published between 2008 and 2013
 - 9 were conducted within the VA

Review process

- International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Task Force created methodological guidelines for developing/reviewing BIAs (Mauskopf et al 2007; Sullivan et al 2014)
 - We developed a review template based on these guidelines
 - Analytic framework
 - Inputs and data sources
 - Reporting format
 - Inclusion of implementation costs
- Each study independently assessed by 2 reviewers for inclusion of key BIA elements; discrepancies resolved in later meeting
- Team met weekly to discuss key elements & identify recommendations for implementation BIA

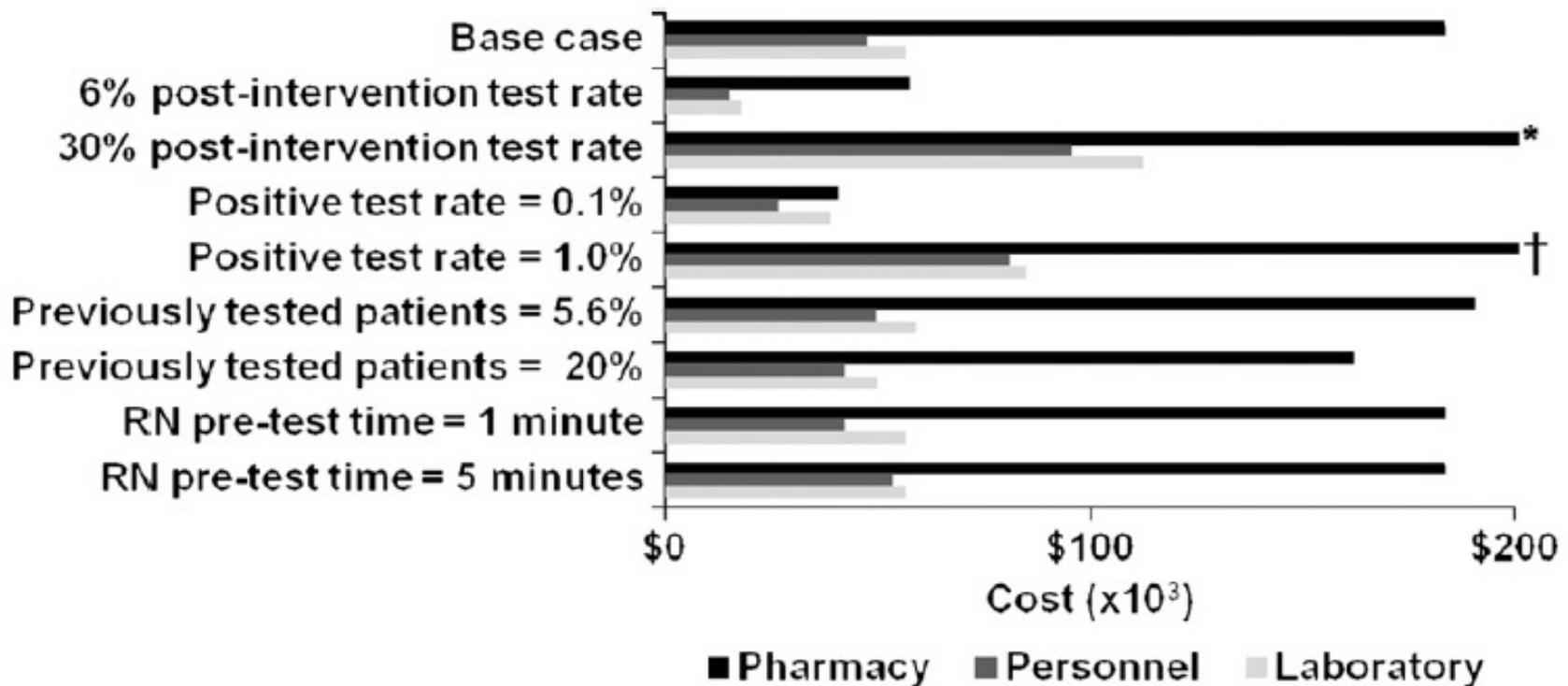
Key BIA elements from review template

Section	Model recommendations	Key aspects
Analytic Framework	Choice of computing framework	Simple cost calculator using spreadsheet software or simulation model
	Uncertainty & scenario analyses	Present one-way sensitivity or scenario analyses
Data Sources and Inputs	Ranges & alternative values for uncertainty & scenario analyses	Provide ranges & alternative values
Reporting Format	Output	Display components of budget impact
	Graphical & tabular display	Present table with disaggregated outputs
Implementation Costs	Costs related to implementation of program/intervention	Report time, materials, & space costs associated with establishing & maintaining intervention

Example of key BIA elements

- Anaya et al 2012 – “Budget Impact Analysis of HIV Testing in the VA Healthcare System”
 - What would be the impact on a VA facility’s budget of expanding HIV testing from 2% of patients to 15% of patients?
 - Built a simulation model using data from their implementation project

Budget Impact Analysis of HIV Testing in the VA Healthcare System (Anaya et al., 2012)



Another example of key BIA elements

- Liu et al 2009 – “Organizational Cost of Quality Improvement for Depression Care”
- Purpose: to measure the organizational costs associated with implementing Translating Initiatives in Depression into Effective Solutions (TIDES), a QUERI-funded quality improvement effort to improve depression care in the VA

Liu et al 2009: Organizational Cost of Quality Improvement for Depression Care (cont'd)

- Tracked costs associated with implementation activities
 - Time spent in meetings
 - Time spent developing training materials
 - Time spent communicating by email
 - \$ of informatics tools (clinical reminder software & programming)
- Cost of all participants who directly participated in design or implementation
 - Included those who led or participated in training or educational sessions
 - Excluded staff who only referred patients to the depression care model

Table 2: Person Counts, Estimated Person Hours and Costs*

<i>Participants</i>	<i>Individuals Participating in TIDES</i>		<i>Total Person Hours</i>		<i>Total Costs</i>	
	<i>%</i>	<i>Person Counts</i>	<i>%</i>	<i>Hours</i>	<i>%</i>	<i>Dollars</i>
Technical Expert Team M.D. and Ph.D. investigators Staff	33	42	66	2,147 (1,786–2,583)	70	197,787 (181,778–216,951)
Clinical partners Senior leaders from regions and medical centers Local leaders and clinical staff Care managers	67	86	34	1,086 (952–1,231)	30	84,438 (75,676–93,901)
All participants	100	128	100	3,233 (2,738–3,813)	100	282,225 (257,454–310,852)

*The ranges in parentheses are based on sensitivity analyses.

TIDES, Translating Initiatives in Depression into Effective Solutions.

Barriers to conducting BIA

- Requires specialized skill set plus familiarity with VA system
 - Relatively few VA investigators have this skill set
 - University-based health economists often lack experience with VA processes & data sources
- Data collection for BIA can be very resource intensive
- BIA results can be difficult to publish in peer-reviewed journals due to generalizability concerns

Key recommendations

- There exists a significant opportunity to use BIA to inform the implementation/scale out of interventions within VA
- QUERI supports VA implementation of evidence-based interventions into clinical practice
 - BIA should be a component of QUERI-supported projects to assess costs associated with implementation
- Find a health economist early in the process via the Health Economics Resource Center (HERC) experts list:
<http://www.herc.research.va.gov/resources/experts.asp?search=%25>
- Develop additional capacity to support BIA
 - Develop data collection templates
 - Develop other templates to facilitate BIA calculations

Conclusions

- Successfully implementing evidence-based practices also depends upon understanding economic consequences
- Analyses of budget impact within implementation studies are fairly rare but are of great interest to decision-makers
- It's critical to increase awareness about existing guidelines and methods for conducting budget impact analysis

References

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