INSTRUCTIONAL GUIDE

WEB-BASED RETURN ON INVESTMENT (ROI) TOOL

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INSTRUCTIONAL GUIDE

Background and Purpose

Public health programs, services and activities are often asked to describe and provide evidence of their impact. One way to do this is to calculate the program or initiative's return on investment (ROI). The Association of State and Territorial Health Officials (ASTHO), through a cooperative agreement with the Office for State, Tribal, Local and Territorial Support at the Centers for Disease Control and Prevention (OSTLTS, CDC), provided capacity building assistance to grantees funded under the National Public Health Improvement Initiative (NPHII) *Strengthening Public Health Infrastructure for Improved Health Outcomes***.** Through this work, the CDC and ASTHO identified the need for providing assistance with estimating the ROI of public health improvement projects. Dr. Glen Mays of the University of Kentucky, College of Public Health was retained as an expert consultant and took the lead on developing an Excel-based tool.

To help guide this effort, a small workgroup was convened consisting of CDC officials from OSTLTS, ROI and quality improvement (QI) experts, state and local administrators (NPHII Performance Improvement Managers or PIMs), foundations and non-profit organizations. The overall objective of the project was to develop a useable tool to estimate the ROI for improvement efforts undertaken within public health agencies. The ROI workgroup was formed to ensure that the tool's development cycle had the ongoing input of perspectives necessary to achieve this objective – namely policymakers, funders, quality improvement administrators, and end-users of the analysis. The tool was beta tested by state health agencies in Connecticut, Maine, and Virginia. Success stories were documented for Connecticut and Maine.

ASTHO received feedback through the ROI workgroup that the ROI tool would benefit from a more user-friendly interface. As such, ASTHO contracted with American Technology Services (ATS) to develop a web-based, streamlined version of the tool. The online tool allows users to create secure accounts from which to access the tool and create and save multiple projects. The web-based ROI tool was deployed and made accessible to users in January 2016.

INSTRUCTIONAL GUIDE

What is ROI?

ROI is a form of cost analysis that compares the net costs of an intervention with its net benefits in financial or monetary terms. Because ROI follows a business model, the goal is to realize a positive case return. A positive ROI means the investment gains compare favorably to the investment costs. The tool can be used prospectively as a decision-making tool for new projects or initiatives, during quality improvement (QI) implementation to track ROI, and retrospectively to show economic returns of investments already made.

The ROI tool makes comparisons over time, using:

- Investment costs - Planning and implementing the initiative
- Routine operating costs - Operating costs of the program, service line, or operational unit that is to be altered, improved or changed by the initiative
- Outputs or outcomes - Additional benefits realized through the initiative

The ROI tool defines four ways in which a positive ROI can be achieved:

1. Changes in number of production units - Greater efficiencies realized
2. Changes in service delivery outputs/reach - Increased service encounters
3. Changes in reach – Increased percentage of target population reached by services
4. Changes in health-related outcomes – Decreased number of preventable or avoidable adverse health events

The tool also takes into consideration the following:

- Net Present Value – Assesses alternatives by measuring the increase in wealth that would result from implementing a project. The present value of the cash flows at the required rate of return of your project compared to your initial investment.
- Amortization – Spreads capital expenses (ex. computer equipment, furniture, capital leases, etc.) over the lifespan of the project to roughly match an asset's expense with the revenue it generates.

Before you start inputting information into the ROI tool, it is important to think about the internal staff and external partners involved in planning and implementing the focal intervention or project. It is also important to get leadership buy-in. The tool requires personnel salaries, which can require working with your agency CFO. It is best to begin these conversations early.

The tool has been used by a number of state health agencies, including:

- Connecticut – Connecticut used the ROI tool to calculate the monetary gains of standardizing socio-demographic measures across several public health databases to more efficiently monitor health trends among target populations and improve health equity outcomes. (Appendix A)

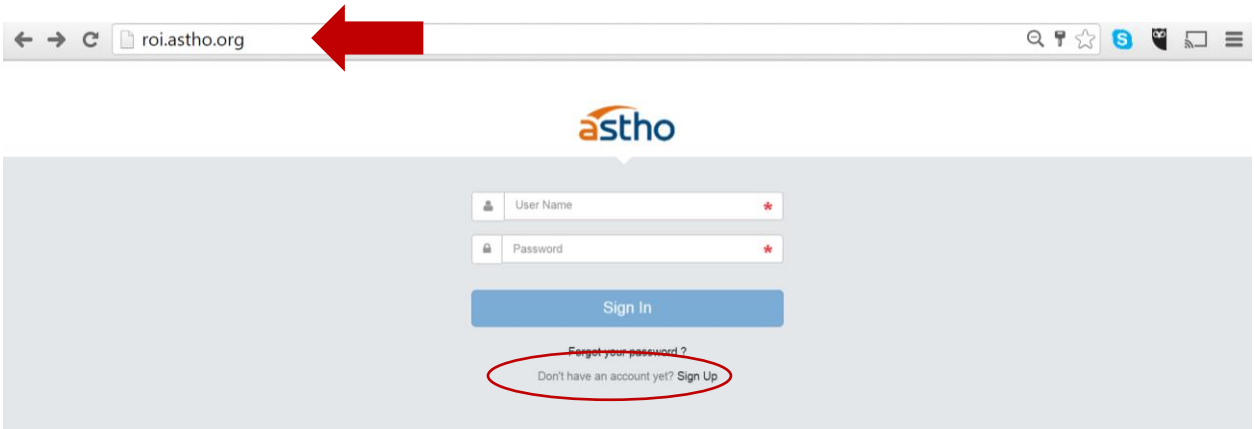
- Maine – Maine used the ROI tool prospectively to estimate the economic returns of investing in software to host web-based meetings to save on in-person meeting costs, such as travel. (Appendix B)

- Oklahoma – Oklahoma used the ROI tool to make the business case to payers to invest in community care coordination models to reduce the number of cardio-vascular disease (CVD) events and hospital re-admission. (Appendix C)

- Utah – Utah used the ROI tool to estimate the monetary value of testing prison populations for HIV, STDs, and Hepatitis C and linking positive patients to care within the community.

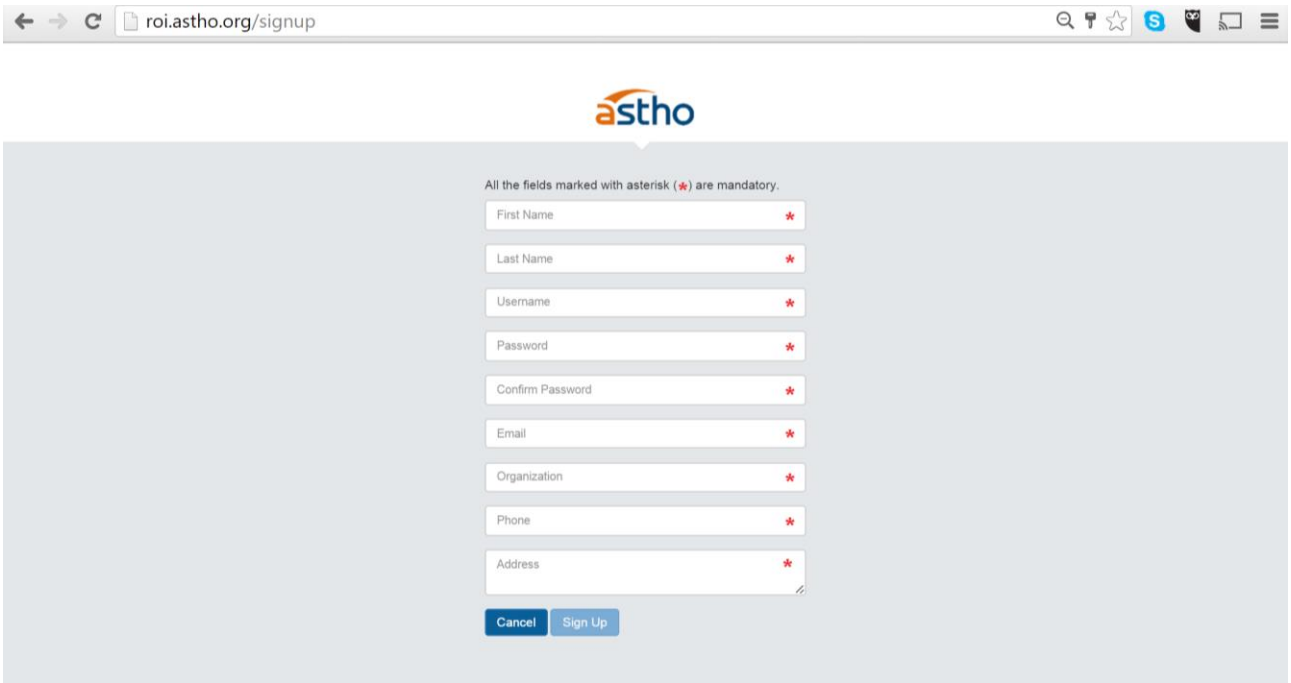
Instructions for Creating ASTHO ROI Tool Account

1. To access the ASTHO ROI Tool, go to roi.astho.org. *Note, do not use www. before the web address.



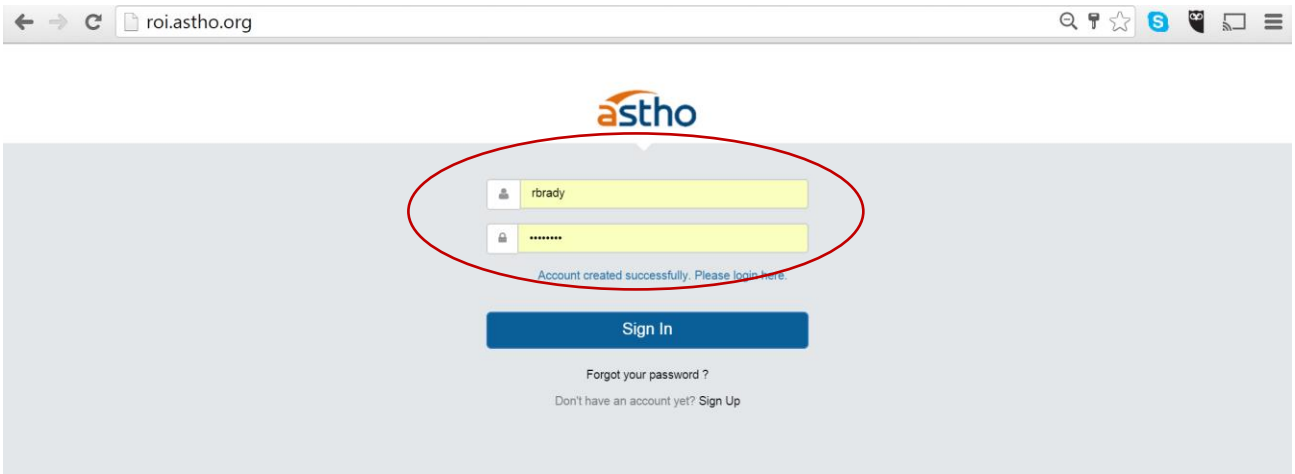
2. Go to “Don’t have an account yet?”

3. You will be redirected to a sign-up page. Fill in the required fields. By creating an account, you will have secure access to create and save multiple projects. *Note that email addresses must be in all lowercase and phone numbers must be numbers only (no parentheses, dashes, or other special characters).



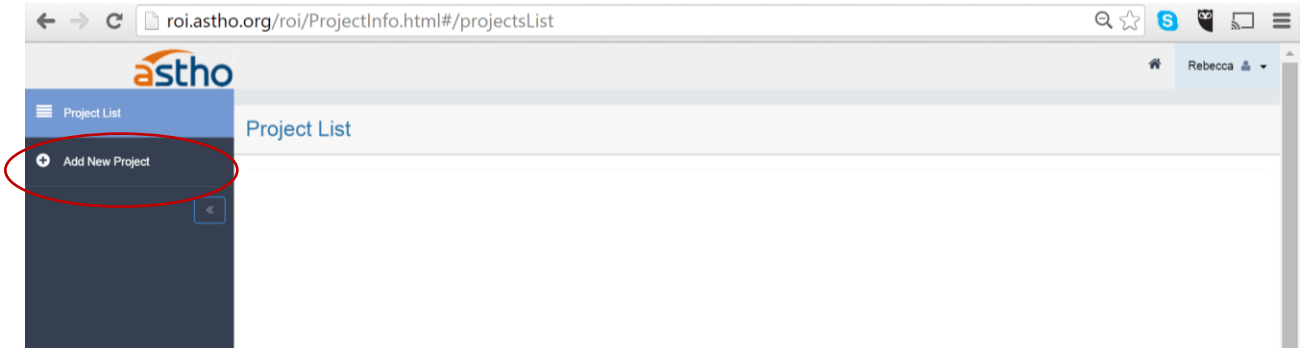
4. Once you complete the form, click “Sign Up.”

5. You will be redirected to a sign-in page with a message that your account has been created successfully.



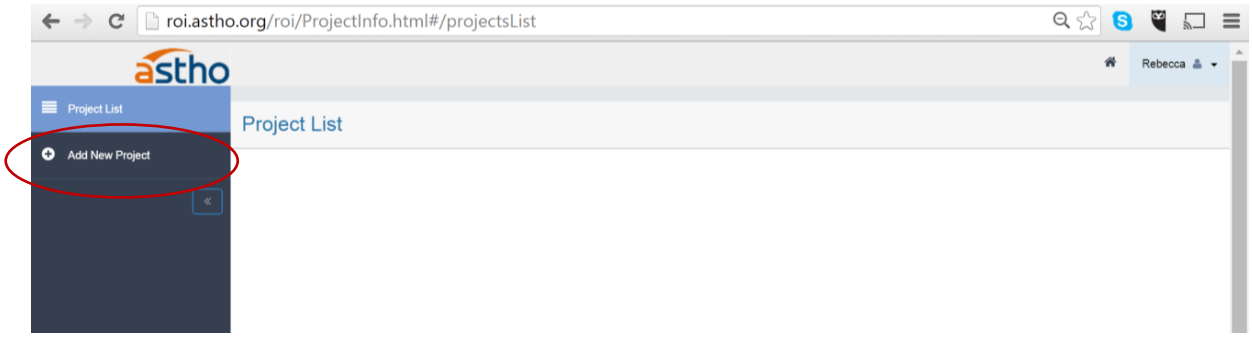
6. Sign in using your newly created username and password.

7. You will be redirected to a new page where you can create a new project.



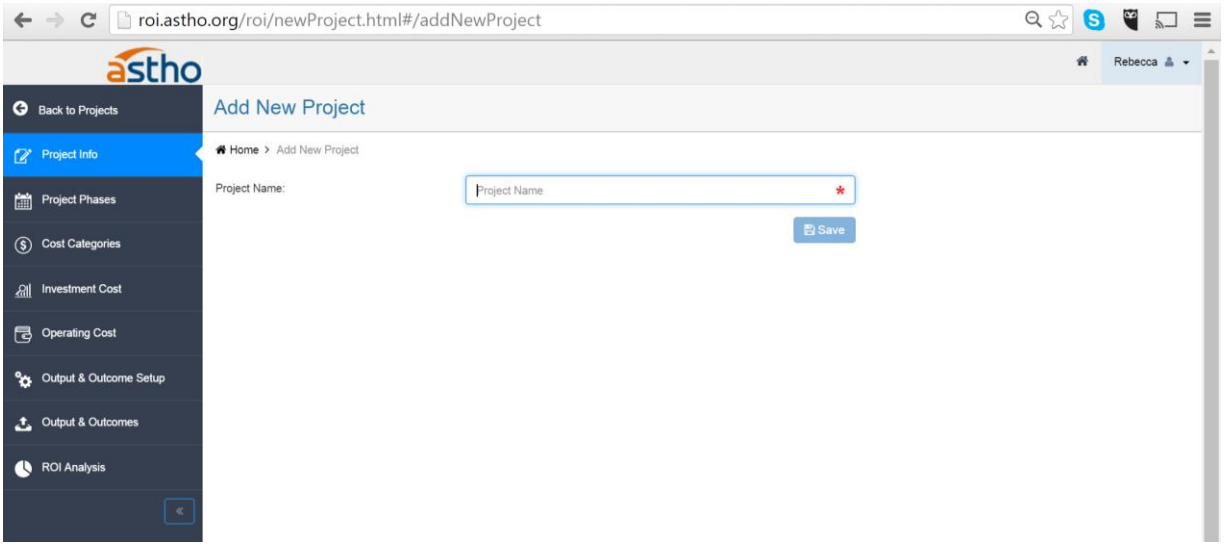
Add a New Project

1. Once you've created a username and password, you can start adding projects to your account. Click on "Add New Project" to begin inputting data into the tool to estimate the ROI of your project.



PROJECT INFORMATION

2. You will be redirected to the "Project Info" page. Create a title for your project and click "Save."

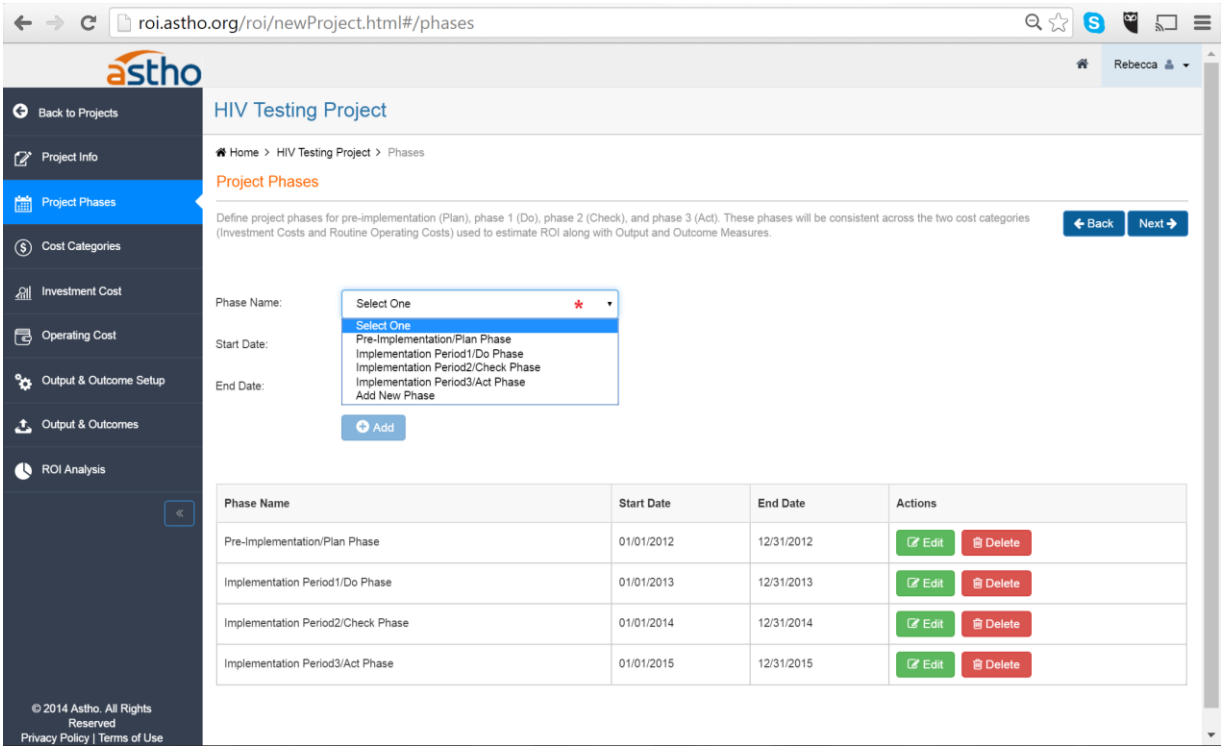


DEFINE PHASES

3. Use the dropdown menu next to "Phase Name" under the "Project Phases" tab to define each phase of your project. The tool makes comparisons over time to determine the return on investments made. The tool uses the quality improvement method of Plan-Do-Study-Act to define time periods. As such, the tool structures analyses using four distinct phases, defined as:

- "Pre-Implementation or Plan Phase" - the time spent planning the initiative or project.
- "Implementation Period 1 or Do Phase" - the initial implementation of the project.
- "Implementation Period 2 or Check Phase" - the time period during which early implementation is reviewed.
- "Implementation Period 3 or Act Phase" - the time period when adjustments learned from early implementation are made or expansion occurs.

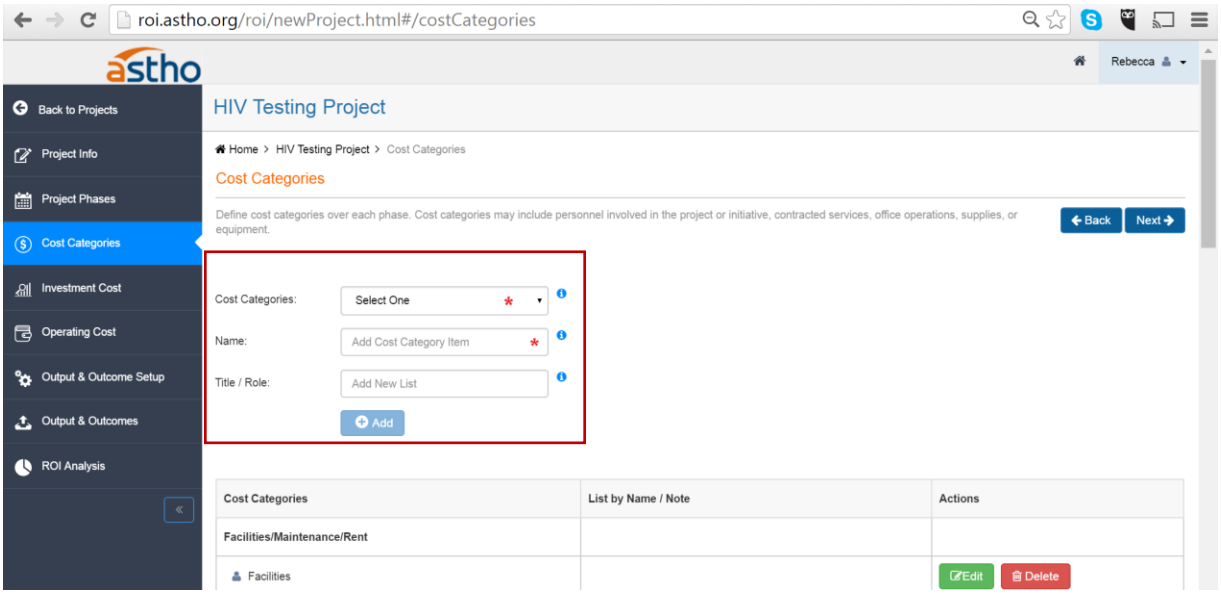
It is very important that you think carefully about each of these defined time periods. This tool will make comparisons during each of these four phases for the investment costs, routine operating costs, and outputs or outcomes achieved during each time period. After you've selected a phase using the dropdown menu, choose the start and end dates for the phase and click "Add." Once you have completed this for all four, your defined phases will be listed below the "Add" button.



DEFINE COST CATEGORIES

4. Next you'll define your cost categories. You will want to spend some time and attention on this as you will need to think about the various costs for both your investment and routine operating costs over the lifetime of the project. However, generally personnel cost are the largest costs to the project. Then think about other direct costs such as contracted services, supplies, travel, rental space costs, training costs, or any equipment such as computers or software. But certain costs that remain constant or are

not directly attached to the focal intervention do not need to be included. One example would be facilities costs for an initiative aimed at streamlining procurement processes. The cost of facilities remains constant regardless of the change introduced. However, if the project involved determining the ROI on expanding community health clinic space, then the cost of additional space would need to be included. Use the dropdown menu to see a list of pre-populated cost categories from which you can select. Once you've selected the category, include a name and title or role, if applicable. For example, if you select "Personnel" as your cost category, you can include the name of the staff person and their job title. Once you've completed these three fields, click "Add."



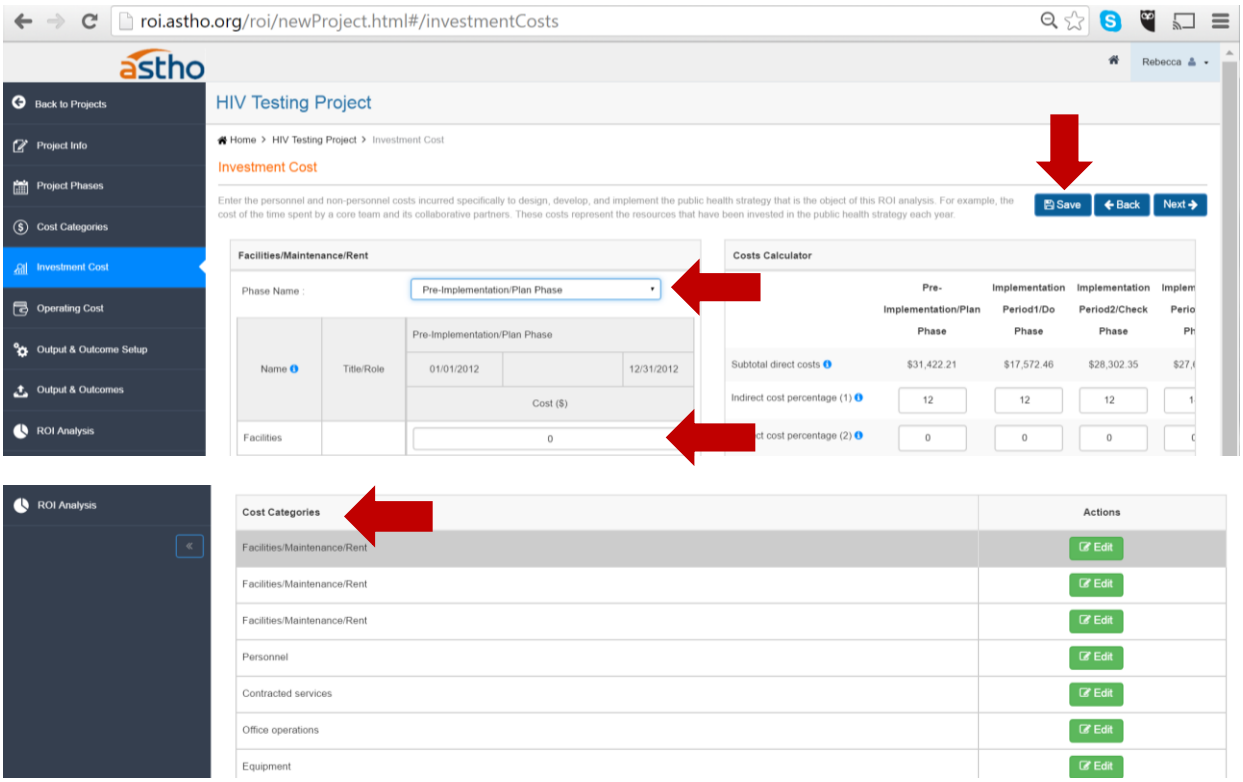
ENTER INVESTMENT COSTS

5. Once you've added all of your cost categories over the lifetime of the project, click "Next" and you will be directed to the "Investment Cost" tab. The cost categories you just defined on the previous screen will populate under the "Costs Calculator." Go through each cost category and click "Edit." Choose the phase using the dropdown menu next to "Phase Name" and enter the cost for each cost category within each phase. Generally, your investment costs are higher in the beginning phases of a project and then taper off as time goes on, as planners will need to invest much time up-front during the Pre-Implementation Time Period and Implementation Period 1, relatively to subsequent time periods.

   When thinking about your investment costs, be sure to identify all key planners involved. You can identify planners and estimate the amount of time spent planning your initiative by using meeting minutes, estimating the time spent in meetings (if retrospective), or using and updating tracking systems to collect this information (if prospective). Personnel costs for both investment and routine

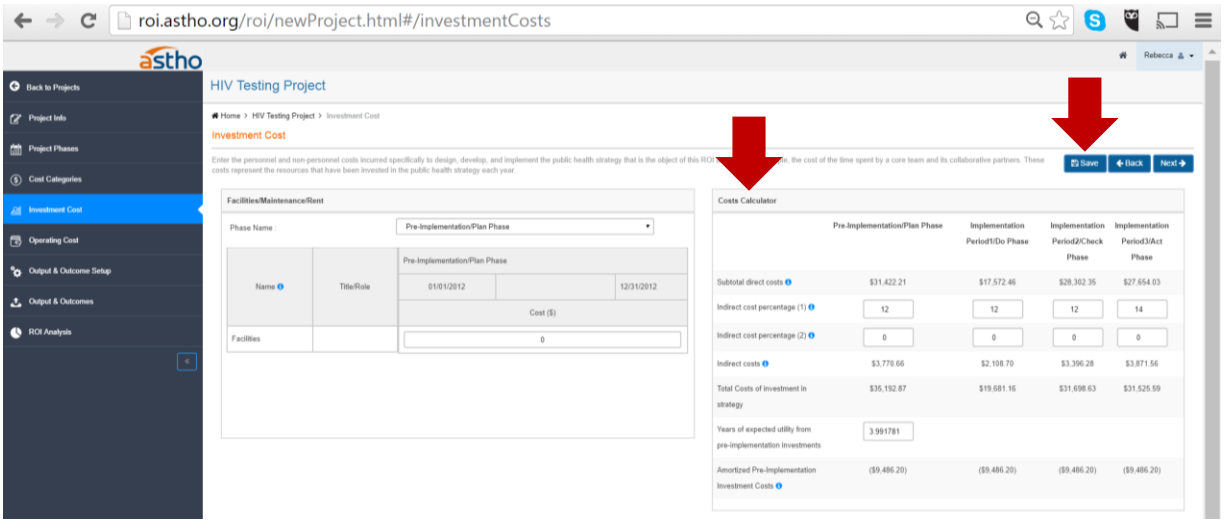
operating costs require staff salaries be entered into the tool, so it is a good idea to involve your agency's chief financial officer (CFO) to estimate the cost of the initiative.

**** It is very important that you save your work each time you edit a new cost category!**



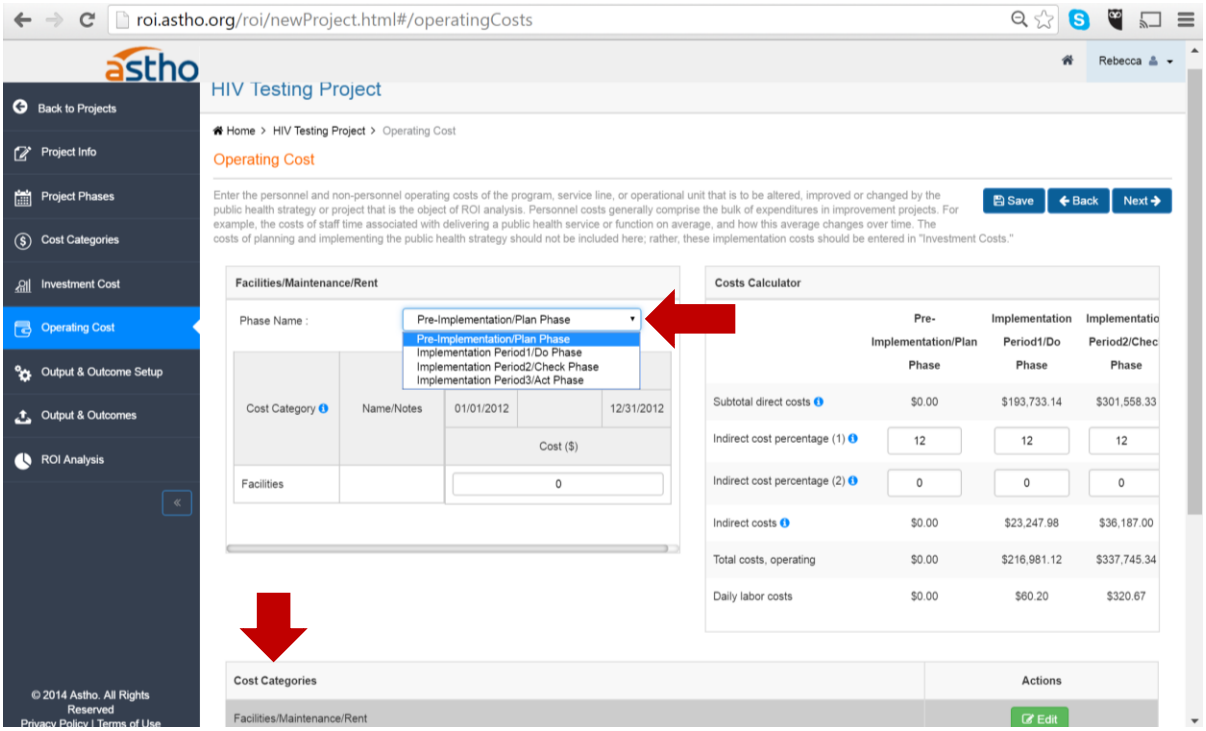
6. To the right, you will see a costs calculator. Here, you can enter the indirect cost percentage for your agency or organization. If you work for an academic institution and have an additional G&A rate, you can enter it in the "Indirect cost percentage (2)" area. There is also an area to add the number of years of expected utility from pre-implementation investments. This number will amortize your investment costs over the lifetime of the project. Once you enter in the costs for each cost category over all of the project phases, the costs calculator will show your total direct and indirect costs, your total cost of investment in the strategy, and your amortized pre-implementation investment costs.

**** Don't forget to save your work after you enter in your indirect cost percentages and years of utility!**



ENTER ROUTINE OPERATING COSTS

7. After you've entered and saved your investment costs, click "Next" and you will be directed to the "Operating Costs" tab. Here, you will enter the routine operating costs, or costs for delivering the project or program that is implemented or altered during the defined implementation time periods. Your cost categories will be listed below the costs calculator. Edit each one and enter the routine operating costs for each cost category for each phase. Again, the largest direct costs are usually personnel. Generally, routine operating costs are low in the early phases of the project and then increase and then remain steady as the project progresses. ** Remember to save your work after you edit each cost category!



ENTER OUTPUT AND OUTCOME MEASURES

8. The tool allows users to enter output or outcome measures. While it is not necessary to include data in this section, it significantly impacts the cumulative ROI. The tool measures changes or improvements in four major areas:

    1) Number of production units - *Increase in service units delivered*

    2) Changes in production time - *Greater efficiencies realized*

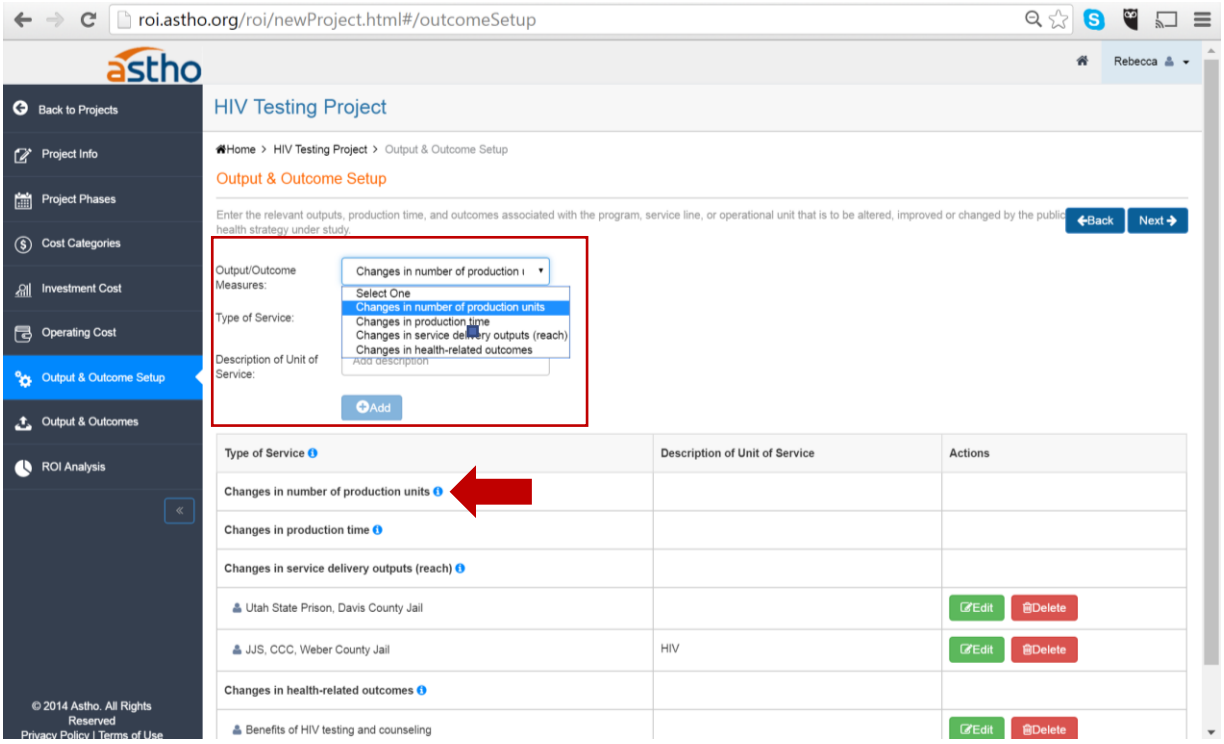
    3) Changes in service delivery outputs (reach) - *Increase in percentage of target population reached by services*

    4) Changes in health-related outcomes - *Decrease in preventable or avoidable adverse health events*

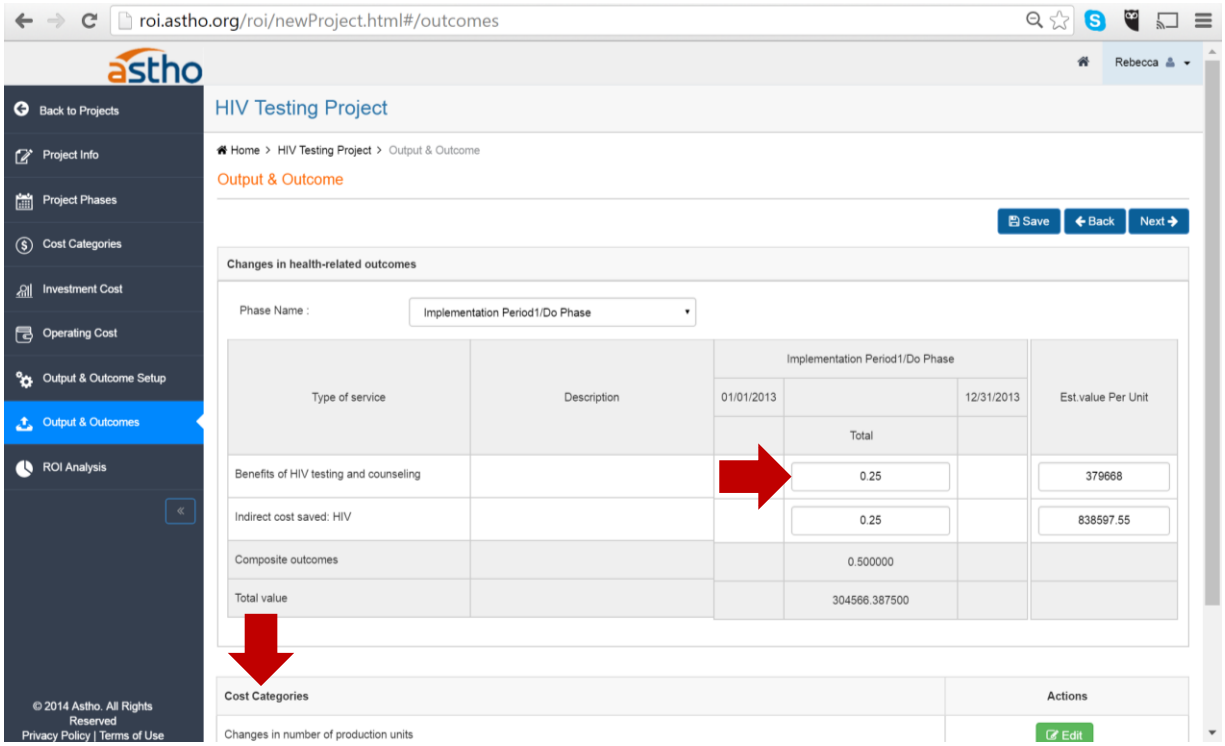
    This section will probably require more extensive research, such as literature reviews, obtaining hospital fee information, or conducting time studies to evaluate changes or improvements made through your intervention. It is not expected that a user would include data for all four output/outcome measure sections, and it is very important to think through the measures that you will use to ensure

you are not double counting the impact made through your project. Examples of data and other tools utilized for this section by previous users can be found in Appendix D.

9. To set up your output/outcome measures, choose the measure for which you would like to enter data using the dropdown menu next to "Output/Outcome Measures." Then, include a description of the type of service being assessed, such as the benefits of HIV testing and counseling. Click "Add." Click on the blue circle with the letter "i" for more information and guidance on completing each measure.

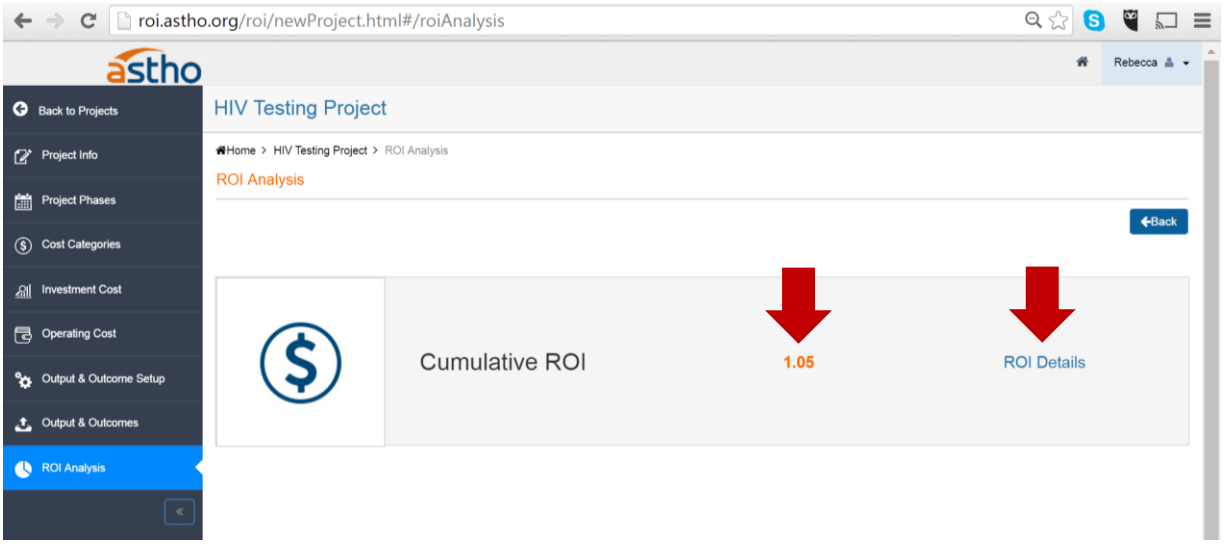


10. Once you've added all of your output/outcome measures, click "Next" to be directed to the area where you will enter your data. The output/outcome measures that you assigned in the previous tab will populate for you. Click "Edit" to enter data for each output/outcome measure for each project phase. Click "Save" each time you add data to ensure your work is saved.

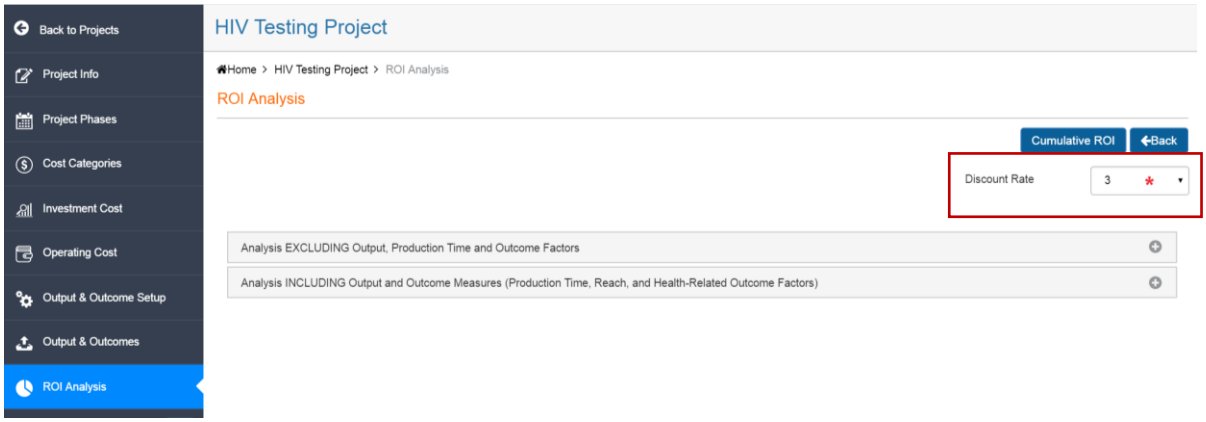


ROI ANALYSIS

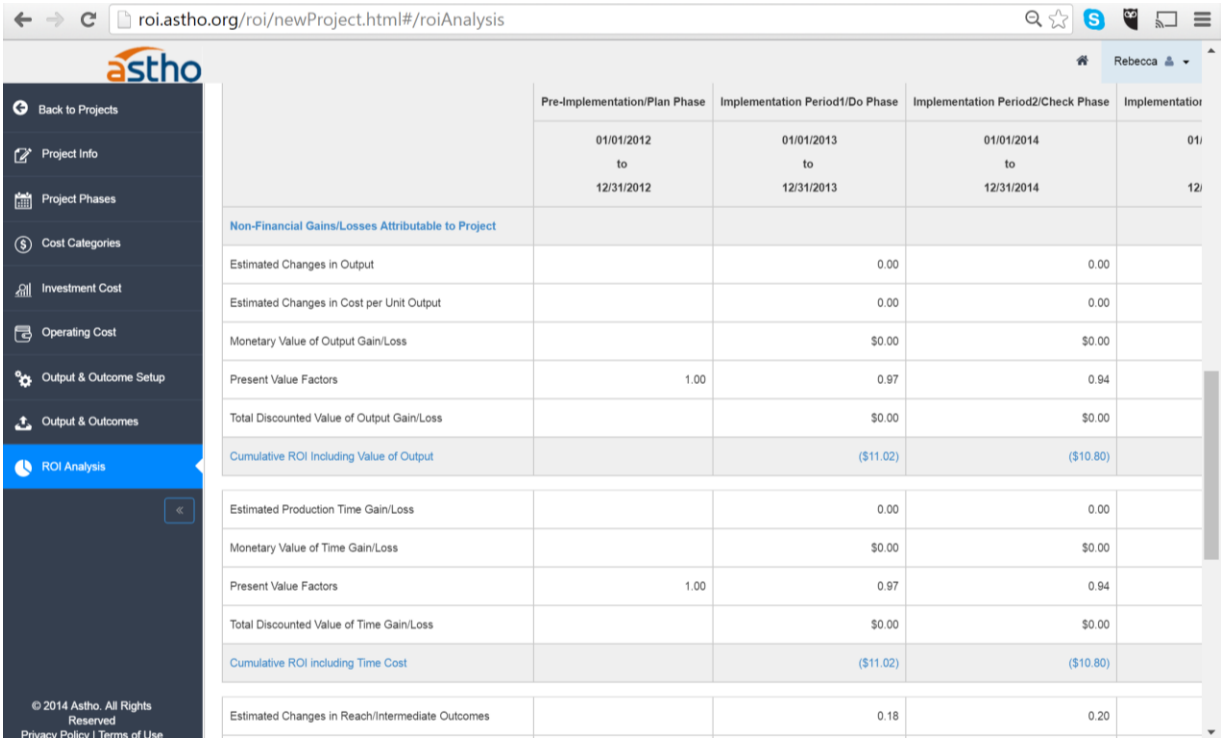
11. After you've entered your output/outcome measures and saved your work, click "Next" to see your ROI Analysis. You will see the cumulative ROI for your project or initiative in bold. To see a more detailed analysis, click "ROI Details."



12. You can view your ROI analysis INCLUDING or EXCLUDING the output/outcome measures. You will notice in the upper right-hand corner an area to include a discount rate, which refers to the interest rate and helps determine the present value of future cash flows. The tool automatically defaults to a 3% discount rate. If there is greater uncertainty as to future cash flows or a higher risk to the project, you should use a higher discount rate.



13. You will see a breakdown of the ROI analysis by each project phase. In this particular analysis, the cumulative ROI overall project phases is 1.05. That means, that for each dollar invested, there is a return of 1.05.



	Pre-Implementation/Plan Phase	Implementation Period1/Do Phase	Implementation Period2/Check Phase	Implementatio
	01/01/2012 to 12/31/2012	01/01/2013 to 12/31/2013	01/01/2014 to 12/31/2014	01/ 12/
Non-Financial Gains/Losses Attributable to Project				
Estimated Changes in Output		0.00	0.00	
Estimated Changes in Cost per Unit Output		0.00	0.00	
Monetary Value of Output Gain/Loss		$0.00	$0.00	
Present Value Factors	1.00	0.97	0.94	
Total Discounted Value of Output Gain/Loss		$0.00	$0.00	
Cumulative ROI Including Value of Output		($11.02)	($10.80)	
Estimated Production Time Gain/Loss		0.00	0.00	
Monetary Value of Time Gain/Loss		$0.00	$0.00	
Present Value Factors	1.00	0.97	0.94	
Total Discounted Value of Time Gain/Loss		$0.00	$0.00	
Cumulative ROI including Time Cost		($11.02)	($10.80)	
Estimated Changes in Reach/Intermediate Outcomes		0.18	0.20	

For Additional Information

For additional questions or information, please contact Karl Ensign (kensign@astho.org).

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Definitions

Investment Costs - Planning and tracking implementation of the initiative (labor, other direct, and indirect costs)

Personnel - Staff significantly involved in the design, development, and implementation of the project

Non-personnel - Other direct costs incurred during design, development, and implementation.

Subtotal direct costs - Total costs that can be completely attributed to the production of specific goods or services, such as materials, labor and expenses.

Indirect costs - Costs that are not directly associated with a single activity, event, or other cost object. Includes general and administrative expenses (G&A), overhead, etc. as reflected in agency budgets.

Amortized Pre-Implementation Investment Costs - Capital expenses spread out over the lifespan of the project to roughly match an asset's expense with the revenue it generates.

Routine Operating Costs - Delivery of project or program that is implemented or altered (labor, other direct, and indirect costs)

Output and Outcome Measures - Additional benefits (health outcomes) realized through the initiative

Changes in production units - Increase in service units delivered. Use this section if your project directly impacted the quantity of outputs or events during your defined time period. Examples include time to complete an inspection, time to investigate an urgent case report, etc.

Changes in production time - Greater efficiencies realized. Use this section if your project directly impacted the quantity of time per unit of service delivered events during your defined time period. Examples include time to complete an inspection, time to investigate an urgent case report, etc.

Changes in service delivery outputs (reach) - Increase in percentage of target population reached by services. Use this section if your project directly impacted the percentage of target population reached by services. Examples include vaccination coverage rate, percentage of restaurants without critical violations, percentage of case reports received electronically, etc.

Changes in health-related outcomes: Decrease in preventable or avoidable adverse health events. Use this section if your project directly impacted the number of preventable or avoidable adverse health events. Examples include preventable cases, preventable deaths, preventable hospitalizations/encounters, preventable health care costs, etc.

Cumulative ROI - The aggregate amount that an investment has gained or lost over time.

Net Present Value - The present value of the cash flows at the required rate of return of your project compared to your initial investment.

Internal Rate of Return - The interest rate at which the net present value of all the cash flows (both positive and negative) from a project or investment equal zero.

Appendix

APPENDIX A

Connecticut Calculates ROI of Database Modifications Designed to Improve Health Equity Outcomes

Connecticut standardizes sociodemographic measures across several public health databases to more efficiently monitor health trends among target populations and improve health equity outcomes.

Connecticut operates more than 50 public health databases for surveillance of various health issues.

This wealth of information cause logistical difficulties in fulfilling the separate sociodemographic data requirements of different grants and funding streams. The Connecticut Department of Public Health (CTDPH) staff had to manually adjust the data (collapse, expand, or redefine categories) to analyze health outcomes across databases and track health outcomes for various demographic groups. It was clear that standardizing data measurement and reporting of target sociodemographic data would expedite this work.

The state recognized the problem for many years and so were committed to the quality improvement (QI) effort. But because database upgrades are costly and time-consuming, the CTDPH deputy commissioner wanted to better understand the value of the QI effort before moving forward with the changes to all databases. Consequently, the state applied ASTHO's new return on investment (ROI) tool to determine the project's value. The new ASTHO ROI tool compares the following pre- and post-implementation:

1. Project investment costs. This includes all new and onetime costs of the QI initiative, such as staff time planning the strategy, training and making revisions to the databases, travel costs, and training materials.
2. Routine operating costs associated with such as all ongoing costs of database management and data analysis pre- and post-implementation.
3. Value or benefit of intervention. For example, the number of hours or days saved by reduced time to analyze data.

State officials did not initially expect a big or necessarily positive ROI. They undertook the QI initiative because they expected it to improve data quality and, ultimately, health outcomes. The ROI analysis would help them realize the cost.

- Connecticut wanted to update its 50 public health databases to standardize measurement and reporting of sociodemographic data.
- The ROI for database upgrades was virtually cost neutral.
- When ROI is calculated with anticipated savings due to early detection of preventable illness, ROI shows significant cost savings for each dollar spent.

Steps Taken:

- A QI team made up of systems, statistics, subject matter experts, and health equity staff worked to standardize measures of race, ethnicity, gender, and age—all key factors in health equity and population health that would work across data bases. With a Robert Wood Johnson Foundation grant, the team used the "Plan-Do-Check-Act" cycle QI method to guide its work. The team developed a database compliance plan that included a process map outlining the specific steps needed to modify the target databases. Additionally, the team met with database managers to see which changes were feasible.
- By November 2012, six databases had been updated. The Department's Office of Public Health Systems Improvement wanted to estimate the ROI and answer the question: What was the return on investment for every dollar spent on planning and making database revisions? To analyze this issue, CTDPH used the ASTHO ROI tool.
- The ROI analysis used salary and fringe information collected from the state website. This provided yearly wage compensation. A customer satisfaction survey was used to collect staff hours spent on planning and database updates. Together, these provided the cost of staff time spent on the initiative (the primary investment costs).

Results:

- Using the ROI tool, CTDPH found that improving data monitoring and data quality was virtually cost-neutral. In the short term, the time and costs associated with planning and implementing changes were nearly equivalent to the time saved in making adjustments under the former data system. This was good news to those at CTDPH, who had been concerned that the database adjustments would be a major expense. Because the effort was found to be cost-neutral and would generate more reliable data, CTDPH considered the project a success.
- The state then calculated a second ROI model that included two new assumptions: (a) improved data would help identify a modest number of new cases of treatable conditions and (b) improved data would help the agency provide services and support sooner. Under the second analysis, CTDPH found that the ROI became positive as new cases were identified. Given the cost savings created by early detection, it took just a small number of cases to improve the value of updating the databases to better capture sociodemographic information.
- Due to the success of this QI project, Department's Office of Public Health Systems Improvement and other agency staff plan to apply the ASTHO ROI tool to future QI efforts to help them make the right investments.

Lessons Learned:

- The ASTHO ROI tool has multiple uses. It can be used either retrospectively with actual program costs or prospectively with estimated costs and savings. In this case, the tool calculated both implementation costs and anticipated impact of improved surveillance.
- Health agencies can successfully use customer satisfaction surveys to collect data on staff time dedicated to planning and implementing quality improvement (investment costs) as well as time spent

on activities pre- and post-implementation that are the target of the QI project (routine operating costs).

- Although the task of determining investment and operating costs may seem daunting at first, once the data collection systems are in place, the tool will calculate returns and deliver refined and up-to-date amounts as the strategy is implemented.
- ROI findings are a good way to compare projects. As noted above, Department's Office of Public Health Systems Improvement and other agency staff plan to build on the success of this QI project and apply the ASTHO ROI tool in future QI efforts.

For more information:

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APPENDIX B

Maine Uses New Return on Investment Tool to Inform Decision-making

Looking for ways to reduce staff travel time and expenses, Maine applied ASTHO's new ROI tool prospectively to build a business case for the proposal.

Maine is a rural state of 31,000 square miles and only 43 people per mile. The state's eight public health district liaisons are responsible for promoting and increasing collaboration between public health partners and stakeholders. Due to the number of community-based meetings spread across the state and frequent meetings at the Maine Department of Health and Human Services (MDHHS) office in Augusta, district liaisons dedicate disproportionate time to travel—typically working overtime—and still must miss some scheduled meetings due to time constraints. In addition to the human costs of time away from family, travel expenses such as labor costs, mileage reimbursement, lodging, and per diem payments are a significant part of the liaison team's budget. Using ASTHO's new return on investment (ROI) tool, MDHHS found that replacing some face-to face meetings with webinars and video conferences will address these challenges.

- For every $1 that Maine spent replacing many face-to-face district meetings with video conferencing projects, the ROI tool showed that $27 would be saved.
- Almost $8,000 will be saved annually just by eliminating travel to one state meeting per month.

The ASTHO ROI tool compares the following pre- and post-QI implementation:

1. Project investment costs. This includes all new and onetime costs of the QI initiative, such as staff time planning the strategy and tracking it post-implementation, training and software investments etc.
2. Routine operating costs associated with the process or program that is the target of the QI effort. Over time these can reflect the number of hours or days saved through the QI initiative, increased efficiencies etc.
3. Outputs or outcomes achieved in addition to improved routine operating costs. These are not essential to realizing a positive ROI.

ROI is determined by comparing these elements to each other over time.

Steps Taken:

- The state's performance improvement manager (PIM) met with the district liaisons to identify the causes of high travel costs and identify alternative solutions that could reduce these costs.

- District staff proposed replacing some of the face-to-face meetings with web meetings and video conferences, but said that district office staff had neither the skills nor the software and licenses to use this technology. Additionally, the office staff that conducts these meetings would need better capacity to include remote participants effectively.
- To strengthen MDHHS' budget request to the state for staff training and software licenses, Maine's PIM applied ASTHO's new ROI tool.
- Cost data were collected from several sources, including the state's human resources website (salary bands and fringe rates), state mileage reimbursement rates, and online estimates for computer software. District liaisons provided estimates of the number of hours dedicated to travel, but this information could also be obtained from travel reimbursement reports.

Results:

- Using estimated travel costs—labor, mileage, and per diem—and the goal of reducing liaison travel by 50 percent within two years of implementation, MDHHS found that for every $1 the state spent on the remote access initiative, $27 would be saved by reducing travel time.
- Even if the project was scaled back to just replacing monthly staff meetings at the state office with video conferencing, savings were significant. The state found that almost $8,000 would be saved annually just by eliminating travel to one state meeting per month.
- In addition to the financial benefits, the strategy was expected to improve local partners' attendance at community-based meetings within each district because more people could participate remotely.
- Furthermore, the remote access strategy could decrease overtime, save liaison time that could be used for other public health activities, and may improve worker retention because workers would spend fewer unpaid overtime hours away from home and family.

Lessons Learned:

- The ASTHO ROI tool has multiple uses. It can be used either retrospectively with actual program costs or prospectively with estimated costs to help make the case for a budget proposal. In this case, it was used prospectively to determine the costs associated with using webinars and video conferencing for meetings.
- The tool can be applied to multiple initiatives and used to compare savings between strategies to help make programming decisions. Maine was able to compare savings among such alternate scenarios as reducing travel time by 50 percent or simply eliminating travel to one meeting a month.
- There are workarounds for sensitive data, such as salaries. The Maine PIM made the ROI calculation using average salary amounts for staff that included the value of fringe benefits.

- Although the task of determining investment and operating costs seemed at first daunting to the state, once the data collection systems are in place, users found the tool will calculate returns and deliver refined and up-to-date amounts as the strategy is implemented.
- ROI results must be clearly explained. Cost savings will not always result in budgetary savings. In MDHHS' case, there were two forms of savings: (1) travel expenses that would translate into actual budget reductions, and (2) liaison travel time would be redirected to other job responsibilities and not impact the budget as directly.

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APPENDIX C

What's your ROI? Making the Case for Improving Public Health: Reducing Hypertension through Primary Care & Public Health Integration in Rural Oklahoma

American Public Health Association Annual Meeting

New Orleans, Louisiana

November 17th, 2014

What is Return on Investment (ROI)?

- One evaluation approach of many – analyzes the fiscal impact of interventions
- $$ROI = \frac{(Benefit - Cost)}{Cost}$$
- Primarily used to estimate the population health return on certain public health interventions (injury prevention, immunization etc.).

ASTHO's ROI Tool:

- Developed through the National Public Health Improvement Initiative (NPHII)
- Expert workgroup convened
- Dr. Glen Mays, University of Kentucky developed the first iteration of the tool
- Beta tested by Connecticut, Maine & Virginia
- Focuses on analyzing ROI within the PDSA cycle
- Makes comparisons over time among and between:
  - **Investment costs** of planning and implementing the initiative (staff time)
  - Reductions in **routine operating costs** resulting from the initiative (staff time)
  - Additional **outputs or outcomes** realized through the initiative

- Incorporates present value and amortization

- ASTHO is facilitating the portion of the Million Hearts Initiative that provides CDC funding to select grantees

Heartland OK; Oklahoma's Million Hearts Model

- Goal: Reduce the number of CVD events in SE Oklahoma
- Foundation: Support provider in reaching patient BP objective
  Track patient's adherence with BP medications between regularly scheduled office visits
  Develop referral process with minimal interruptions to practice workflow
- Target: 5 counties (113, 237 population)
- Method: Care Coordination
- Evidence Based Strategy
  - Clinician initiated and ordered care plan
  - Nurse and Pharmacist Assessments protocol driven
  - Care Coordinator at County Health Department (facilitated adherence, enhanced communication, efficient success)
  - Utilizes technology for panel management

- **Success**
  - 25% of Heartland OK patients met NQF 18 within 90 days of enrollment
  - 50% increase in number of clinics able to run an NQF 18 report
  - Standardized Blood Pressure Measurement Policy
  - Open dialogue and goal alignment between private and public payers
  - Utilizing existing data to improve efficient identification of patients for referrals to Heartland OK through SoonerCare (state Medicaid program) reverse notification partnership with Oklahoma Health Care Authority (OHCA)
  - Calculated Return on Investment (ROI)

- **Process**
  - Utilized ASTHO Return on Investment calculator
  - Maintained detailed record of Investment Costs during development
  - Established Implementation Periods to reflect improvement to Heartland OK model as identified using the PDSA process
  - Specified costs to be included in Investment Costs and Implementation Costs

  - Determined percentage of preventable hospitalization charges (45%) as reported through AHRQ data specific to the Regional Medical Center located in the Heartland OK targeted five counties, based upon published estimation for models similar to Heartland OK.
- **Impact of Calculating Return on Investment (ROI)**
  - Utilizing ROI results to make a business case to payers on investments in community care coordination models ($160.00: $1.00 for an estimated 45% reduction in CVD event admissions) as an upstream primary care/public health collaboration.
  - Fostered productive dialogue between private payers, primary care and public health to focus on multi-payer initiatives, Multi-disciplinary Quality Improvement initiatives, and pay for success/global payment systems.
  - Provided foundation from which to attract and engage new partners focused on efficient compensation for care and to document added value for investment in prevention.
  - Demonstrated model that links population health and clinical quality measures (preventable hospitalizations as tracked by ARHQ data specific to the local medical center located with the targeted counties) for hypertension to direct healthcare investments.
  - Highlighted the need for community care coordination models that are locally managed and incentivized through community determined pay for success models assisting in fine tuning scalability.

For more information:

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- Jon Lowry, Chronic Disease Director, Oklahoma State Department of Health, JonL@health.ok.gov

APPENDIX D

Output and Outcome Measures Resources

1. The Utah Department of Health Communicable Disease Prevention Program used the tool to estimate the economic returns of investing in testing several prison populations for HIV, STDs, and Hepatitis C prior to the inmate's release. Utah used the CDC's Sexually Transmitted Infection Costs (STIC) Figure tool to estimate the number of HIV and STD cases averted through the program. They took that number and used the CDC's estimate of annual medical costs to treat HIV and other STDs, and used that information within the health-related outcome measure to estimate the impact of avoiding additional cases of HIV and STDs through the screening program and linking infected individuals to care within the community.

2. Oklahoma determined percentage of preventable hospitalization charges (45%) as reported through AHRQ data specific to the Regional Medical Center located in the Heartland OK targeted five counties, based upon published estimation for models similar to Heartland OK.

3. This study estimates that median initial impatient costs are $16,981 per case: http://bmccardiovascdisord.biomedcentral.com/articles/10.1186/1471-2261-11-11

4. This study estimates that median costs for acute myocardial infarction patients treated with percutaneous coronary intervention are $19,349 per case: http://onlinelibrary.wiley.com/doi/10.1002/clc.22341/pdf.