

*When investing in new technology, a public health agency needs a well-conceived plan that helps the organization understand the need for change, what it is planning to buy, and what the investment is intended to accomplish. Ultimate success starts up front by gaining stakeholder support and seeking answers to the right questions.*

*Good planning also provides documentation and responsible rationale for the expenditure. It secures executive management support for the project. And it provides clear guidance and goals for the project and its desired outcomes.*

*The checklist provided in this publication provides a ready tool for an agency to make sound decisions that put a technology project on track and keep it on track.*

# Topics In Public Health Informatics



## All Systems Go

**Up-front planning sets the stage for a successful information systems project**

**When a public health organization is facing the challenges of acquiring, enhancing, or integrating its information systems, rational and thoughtful planning will help ensure the project's success.**

Thorough research and planning can provide justification and accountability to agency leadership, funders, and taxpayers to support a request for a new health information systems expenditure. Such documentation can also inform an organization's understanding of all the resources needed to secure the technology project's success by substantiating all of the costs and benefits—tangible and intangible, short-term and long-term. In addition, planning should identify potential risks and develop plans for managing these risks, thereby decreasing the chances of project failure.

Although no two projects are alike, key components typically emerge when planning a health information system. The components include:

- **Agency Vision, Goals, and Performance Measures:** The organization's leadership has a long-term, comprehensive outlook for the agency and its mission to serve the community and improve health outcomes.

- **Stakeholders and Governance:** Planning is guided by a steering committee representing all key stakeholders. The committee—with assistance from agency staff and external facilitators—strongly influences the strategy and direction for the health information system.
- **Value and Program Benefits:** The organization carefully considers and explores all benefits and value of the system, tangible and intangible, short-term and long-term.
- **Project Management and Risk Management:** The agency has formalized strategies and methodologies to ensure smooth communications, processes, accountability, resource allocations, and risk avoidance and mitigation.
- **Financial Considerations:** Leadership has secured adequate funding and, to the extent possible, has integrated funding sources to make them synergistic.

## *Getting started with a checklist*

A successful health information systems project is a confluence of needs, goals, decisions, and responsibilities that reach far beyond hardware selection and implementation. To make sure that all details

and issues are addressed during the initial planning, explore key issues up front by asking the right questions. This process sets the stage for determining whether the new system is really needed, and if so, in what form.

As the agency addresses the various challenges presented by the planning checklist, the project takes shape while creating strong rationale that bolsters leadership and funding support. The initial planning checklist is not meant to be a

comprehensive tool, nor does each question relate to every health information systems project. Overall, however, using a planning checklist can focus a technology project, give it a strong start, and help keep it on track.

<b>An initial planning checklist</b>	
<b>Project component</b>	<b>Questions</b>
<b>Agency Vision, Goals, and Performance Measures</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> What is the purpose or impetus for change?</li> <li><input type="checkbox"/> What needs will be addressed?</li> <li><input type="checkbox"/> How will the proposed system fit with the agency's vision for the future, especially in terms of improving service and health outcomes for the community?</li> <li><input type="checkbox"/> How will the proposed system fit with—or enhance—existing systems?</li> <li><input type="checkbox"/> Will the system meet required and recommended data standards?</li> <li><input type="checkbox"/> Will the system adequately protect data security and client confidentiality?</li> <li><input type="checkbox"/> What measures or indicators will show how well the system performs its intended functions?</li> </ul>
<b>Stakeholders and Governance</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Who are the new system's stakeholders, including executive sponsors, funders and supporters, system users (internal and external), contributors of information, individuals/families, and other people and organizations that will interact with the system or benefit from it?</li> <li><input type="checkbox"/> What is the communication plan for involving stakeholders in the new information system?</li> <li><input type="checkbox"/> How will you define roles and request participation from the stakeholders?</li> <li><input type="checkbox"/> How will the governance structure be defined, explained to each stakeholder, and agreed on?</li> </ul>
<b>Value and Program Benefits</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> What benefits are expected—tangible and intangible, short-term and long-term?</li> <li><input type="checkbox"/> What efficiencies will be gained (e.g., increased accuracy and timeliness of data, better program management and evaluation, increased efficiency, improved security, ability to serve more clients, improved client coverage, improved coordination of services)?</li> <li><input type="checkbox"/> What are the desired significant benefits or changes in individual and aggregate (community) health outcomes?</li> <li><input type="checkbox"/> How will the agency measure how effectively the system contributes to improving health outcomes?</li> <li><input type="checkbox"/> What is the plan for tracking health outcome goals on a timeline or deadline basis?</li> <li><input type="checkbox"/> Who will benefit from the implementation of the new or enhanced system?</li> </ul>
<b>Project Management and Risk Management</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> What is the high-level plan for the system's implementation, including timeline, milestones, and roles and responsibilities?</li> <li><input type="checkbox"/> How will adequate working resources be made available (people with the right skills, equipment, organizational support)?</li> <li><input type="checkbox"/> How will change management be accommodated while keeping the project within scope and budget?</li> <li><input type="checkbox"/> What are the consequences of not addressing the agency's vision and goals with the proposed new system? That is, what would happen if the present system stays "as is"?</li> <li><input type="checkbox"/> What are the potentially negative impacts on stakeholders, data contributors, and clients (including time and costs), and how will they be managed or mitigated?</li> </ul>
<b>Financial Considerations</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> What are the overall project costs, including equipment purchases, development, operations, required modifications, training for staff and system users, license fees, and maintenance agreements?</li> <li><input type="checkbox"/> What is the plan for funding these costs?</li> <li><input type="checkbox"/> After implementation, who will pay for the long-term operating and maintenance expenses (public health budgets, physicians, health plans, families)?</li> <li><input type="checkbox"/> Will costs change over time? How much will they go up or down?</li> </ul>

## The case for a business case

On the initial planning checklist, your responses to questions about benefits, efficiencies, costs, and funding can form the basis of a business case. Many organizations require basic documentation of a project's cost justification or a formal business case. A business case can be brief and simple, or it can be extremely detailed, typically with an emphasis on financial and business value-oriented considerations. Throughout the lifecycle of a technology project, a well-developed business case can help the project run more smoothly, stay within budget and on time, and ultimately deliver better results than a project implemented without such thorough research and planning.

If key issues are not considered, the agency risks not securing

funding or organizational support. Worse, of course, would be investing in a health information system that exceeds its budget, misses critical deadlines, fails to meet programmatic needs, is terminated before completion, or simply fails. A business case can pinpoint looming problems up front and help the agency adjust its plans and activities. It can also help focus and manage the overall scope of the project.

Results of a 2003 survey conducted for the Public Health Informatics Institute by the National Association of County and City Health Officials show that most of the 22 medium to large public health agencies surveyed prepare some level of cost justification or a formal business case. (For survey findings and recommendations, see *Making Their Case* below.)

## Accountability is key

Public health agency budgets are tight, technology is expensive, and change is disruptive. In government, new technology is expected to last a long time. A well-conceived and planned health information system helps the organization understand the need for change, what it is planning to buy, and what the investment is intended to do.

Public health agencies have an obligation to ensure that taxpayers' money is used prudently. Good planning provides documentation and responsible rationale for the expenditure and helps secure executive management support for the health information systems project.

Early planning using the checklist provided in this publication can help an agency make sound decisions, setting the stage for a successful project.

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## Making Their Case

### Survey shows how local public health agencies present the business rationale for new information systems

In 2003, the National Association of County and City Health Officials (NACCHO) and the Public Health Informatics Institute (with sponsorship from The Robert Wood Johnson Foundation) conducted a series of in-depth written surveys with 22 local public health agencies (LPHAs). Among their many topics, the surveys explored how LPHAs use business cases and other cost justification in making decisions about "major IT investments."

Due to the diversity in size and budget of the participating LPHAs, the survey did not set a dollar threshold for defining a major IT investment. Instead, the survey defined a major IT investment as

either requiring a significant percentage of the LPHA's IT budget or as having a major impact on the LPHA's IT systems, regardless of cost.

The responses suggest that LPHAs could improve their performance by systematically developing more complete business cases as part of their planning for new investments in information systems.

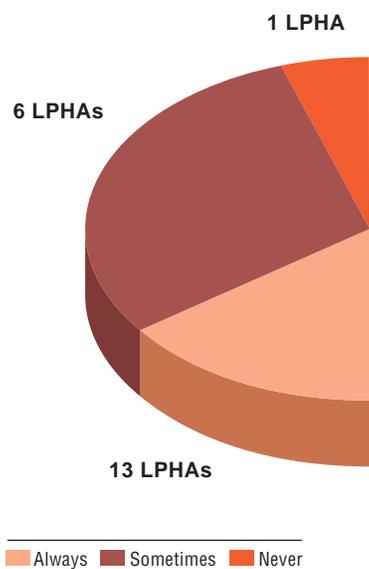
### Key Findings

An information systems project can experience cost overruns when expenses are underestimated or when development or implementation costs are omitted from the original estimate. Survey participants were asked whether cost

overruns had happened in their projects. They were also asked to describe the costs that were underestimated or omitted. Almost all who responded to this question reported some kind of cost overrun on an IT project.

The most frequently reported causes of cost overruns were:

- Implementation took longer than expected; unexpected complexity (9 responses)
- Training costs omitted or underestimated (5 responses)
- Long-term support and maintenance underestimated (4 responses)
- Poor assessment of requirements (4 responses)



**Figure 1:**  
Does your LPHA develop a business case or cost justification for major IT investments? (n=20)

Developing a solid business case can substantially reduce the risk of excess costs or delays for major IT investments.

Survey participants were asked whether their LPHAs developed a business case or other cost justification to get approval for a major IT investment. Their responses are summarized in Figure 1. Nearly two-thirds of

respondents reported that they always develop a business case or cost justification for major IT investments. The level of detail included

in these plans or cost estimates, however, varies widely. (See Table 1, page 5)

LPHA senior management and the LPHA head of IT (7 responses each) were cited most often as having primary responsibility for ensuring that a business case was developed for a major IT investment. In a few LPHAs, program staff had primary responsibility for the business case, and fiscal staff had this responsibility in one participating LPHA.

Respondents were also asked who participates in developing a business case. Most respondents reported that participants include IT, fiscal,

### About the survey participants

In November 2003, NACCHO explored issues of IT management in online surveys administered to a small group (n=22) of LPHA participants representing a variety of disciplines and areas of expertise throughout their agencies. Twelve of these participants were selected via a competitive process, and their LPHAs received an honorarium of \$1,000 for completing a series of five surveys. Ten of the survey participants were members of NACCHO's Information Technology Committee. Twenty participants responded to this survey.

Given the number and diversity of LPHAs (nearly 3,000 agencies in the U.S.) and the small size of the sample surveyed, we cannot generalize the survey findings and conclusions to all LPHAs. The participants included only one LPHA serving a population of less than 100,000, and the participating LPHAs were a self-selected group, based on membership in NACCHO's Information Technology Committee or interest in participating in the survey sites program.

### Survey Sites Participant Characteristics

Characteristic	Low	Median	High
Population Served	39,000	321,696	10 million
LPHA Budget	\$3 million	\$13 million	\$380 million
IT Budget	\$75,000	\$450,000	\$4 million
IT Staff*	0.7 FTE	5.5 FTE	100 FTE

\* Includes LPHA IT staff (regular and contract) and city or country staff that provide IT support to the LPHA.

program, and senior management areas. In some LPHAs, staff from other agencies in the jurisdiction or from the state health agency also participate in developing the business case.

Participants were asked to describe the information that was included in a business case or other cost justification for a major IT investment. Their open-ended responses were coded and are summarized in Table 1. The types of information respondents mentioned most frequently were costs of the investment, anticipated cost savings post-implementation, and expected improvements to the affected programs.

## Perspectives and Recommendations

The survey results show that most LPHAs develop some kind of cost justification for major investments in information technology. Few participants, however, include most of the key elements of a business case, rendering the process less effective than it could be.

For example, few respondents report including important elements such as risk analysis or compatibility with other IT systems. The questionnaire did not, however, include a list of business case elements for reference. Nonetheless, the responses suggest that many LPHAs could strengthen their business cases by including additional key elements.

Responsibility for ensuring that a business case is developed also varies among LPHAs. While this may be appropriate given the differences in organizational size and structure, it is important for senior management to take a leadership role in making decisions about information systems investments. Health officials and

Type of Information	Number of Responses
Costs of IT investment	14
Anticipated cost savings	10
Expected improvement to programs	9
Need for new system	7
Review of other options	5
Source of funding	4
Risks	3
Compatibility with other systems	2

other senior management should understand the key elements of a business case and require that this information be developed for major IT investments.

Input from many parts of the LPHA—senior management, public health programs, IT, and fiscal—is required to make a complete business case, and the survey results suggest that most LPHAs are involving staff from many of these departments. This team-based approach should continue, and key staff from these departments should receive training to improve their ability to contribute to the development of a business case.

## Conclusion

LPHAs should develop strong, comprehensive business cases to help decide how best to use information technology to reach their goals. A well-developed business case adds time up front to the project lifecycle. But a business case also saves time and money by delivering a more successful information systems project—on time and within budget.

**Table 1:**

*Information included in business case or other cost justification for major IT investment (n=20)*

## Resources

Abrams, R. (2003). *The Successful Business Plan: Secrets & Strategies* (4th ed.). Palo Alto, CA: The Planning Shop.

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O'Carroll, P. W., Yasnoff, W. A., Ward, M. E., Ripp, L. H., & Martin, E. L. (2002). *Public Health Informatics and Information Systems* (1st ed.). New York: Springer-Verlag.

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## About Public Health Informatics Institute

The Public Health Informatics Institute is dedicated to advancing public health practitioners' ability to strategically apply and manage information systems.

The Institute assists federal, state, and local public health agencies and other public health stakeholders that are grappling with information systems challenges.

Our services provide clarity about the information systems problems to be solved and identify the solutions to those problems.

The Public Health Informatics Institute is a component of The Task Force for Child Survival and Development.

For more information visit [www.phii.org](http://www.phii.org), call toll-free (866) 815.9704, or e-mail [info@phii.org](mailto:info@phii.org).

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