



PUBLIC HEALTH INFORMATICS

## Final Report

# Prevention Effects Delphi Study\*

Submitted To CDC

By

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## Abstract

The Prevention Research Center (PRC) Program is a network of 23 PRCs and 3 Urban Research Centers (URCs) centers focusing on community-based prevention research centered around research themes that are specific to each Center. The overarching goal of this network includes conducting innovative prevention research; generating new knowledge; and translating knowledge into improved public health practice and policies. In 1997, the Institute of Medicine (IOM) conducted a formal assessment of the PRC Program and pointed out a weakness in documenting the translation of knowledge gained from research into public health programs and policy. To deal with this issues, a computerized knowledge management system, called "**Prevention Effects**" was envisioned that would be capable of yielding information across a wide range of health problem areas.

As part of a larger planning process for designing the **Prevention Effects** architecture, a Delphi Study was planned to identify consensus on a number of issues relative to the design of **Prevention Effects**. The Delphi Process involved a three-round survey of among 40 respondents to gather information on their perceptions of the importance of specific functions and content for **Prevention Effects**. The participants also made recommendations on prevention practitioners and exemplary prevention programs that might serve as models for gathering information for **Prevention Effects**. The current report documents the methodology and findings of the three round PRC **Prevention Effects** Delphi Study.

It was always considered that **Prevention Effects** would be developed over time - with both functionality and content added at different times in its development. To that end, more than 30 separate functional components were evaluated by the respondents, and by the end of the study 11 stood as candidates for the first version of **Prevention Effects** in three categories:

- **Organizational structure:** with a focus on standards of evidence, organizing content by descriptive information, taxonomy based on diseases / health behaviors;
- **User centered:** formatting to user needs, determining user needs, user download capability, user privacy / confidentiality, user browsing;
- **Adding value to existing information:** providing links to additional information, mechanism for user feedback, users rating value of information.

Similarly from more than 30 potential content elements, the group rated 10 as important for the first iteration of **Prevention Effects**. These fell into two broad categories:

- **Information regarding what might reasonably be expected to happen as a result of planned programmatic / research efforts:** what has been tried; what does / does not work; how challenges are dealt with; unintended consequences of actions; and
- **The unexpected consequences and barriers to success:** what happened following implementation; barriers encountered and their solutions, broad spectrum interventions; sustainability of interventions.

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Four principal conclusions were drawn from the study, including:

- The Advisory Committee, CDC, and the eventual vendor should pay close attention to the taxonomic structure, the methodologies to be used to create and maintain it, and on a structure for multiple standards of evidence attached to each information object.
- The user interface, technical assistance aids, and methods to ensure user privacy / confidentiality are essential elements of design consideration.
- There appears to be universal agreement on the importance of user feedback to add value to the system and to ensure that the system stays current and meaningful to the end users.
- The full range of information on a project, from its inception to institutionalization is important; but, crucial among the components of this knowledge is the capacity to explain the why and how - with attention to solutions to barriers to success.

The results of the Delphi provide important input to the CDC and its advisors on **Prevention Effects**. The recommendations for the first version of **Prevention Effects** will help guide preparation of a Request for Proposals from potential vendors interested in collaborating with CDC on its development.

## Introduction

The Prevention Research Center (PRC) Program is a network of 23 PRCs and 3 Urban Research Centers (URCs) centers focusing on community-based prevention research centered around research themes that are specific to each Center. (1) The overarching goal of this network is best characterized by the interaction of three specific tasks:

1. Conducting innovative prevention research;
2. Generating new knowledge; and
3. Translating knowledge into improved public health practice and policies.

In 1997, the Institute of Medicine (IOM) conducted a formal assessment of the PRC Program. The IOM documented many strengths of the PRC program, while pointing out a weakness in documenting the translation of knowledge gained from research into public health programs and policy: "PRCs have not regularly and systematically reported their findings concerning research dissemination and implementation to CDC, and CDC does not have a mechanism for assembling findings from the PRCs in order to promote such activities." (2)

This conclusion is not an isolated observation. Bill Foege, former CDC Director, has often made the point that only a small portion of what we know in public health is routinely applied either in programs or policies.

Given these circumstances, there were a number of assumptions made about why an investment in knowledge management technology might benefit both the PRC program and the public health system in general:

- While we must continue to strengthen the science and effectiveness of prevention, the reality is that there is considerable knowledge about effective prevention practices that is not currently being applied.
- Even though prevention research has generated new knowledge, information remains diffuse and difficult to access, especially for practitioners and policy-makers.
- Technology is not the obstacle. Business and other sectors now employ knowledge management technologies that public health can use to construct a an efficient system that translates prevention research findings into user friendly outputs, tailored to the needs of practitioners, policy-makers, researchers, and media professionals.

- Prevention research findings across the PRC network constitute a robust but manageable pool of prevention research upon which to build and rigorously test a prevention research knowledge management system.

### **The Vision of a Web-Based, Prevention Research Knowledge Management System**

An electronic system, called **Prevention Effects**, is envisioned to organize and add value to existing prevention research knowledge. Such a system would be capable of yielding the following information across a wide range of health problem areas. Exhibit 1 contains a summary of the elements of this vision.

### **Exhibit 1 Information Categories Envisioned for the Prevention Effects System**

1. Scope of the health issue - its prevalence, severity, trends over time, and impact on quality of life.
2. Methods of health promotion and disease prevention tactics and strategies, classified by effect desired and by relevant demographic indicators.
3. Health effects likely to result from the effective application of such tactics and strategies.
4. Costs of those tactics and strategies and their potential impacts beyond health.
5. Health and social policy implications.
6. Research gaps and needs.

It was further envisioned that **Prevention Effects** would include features that would, given appropriate protocols and quality assurance standards, enable users to augment the system. For example, practitioners could access the system and document their experience in applying specific tactics and strategies they drew from the system. This would provide a much needed measure of the utility of a given method or strategy. Likewise researchers, whose findings were used to describe specific tactics and strategies and who learned that their work has influenced practice or policy, could enter such documentation into the system. These application markers are precisely the kind of indicators that the IOM called for in their report, stressing the importance of tracking the extent to which research is indeed being translated into practice or policy.

In June 2000, a planning group was brought together to help identify some of the specific characteristics and functions that would be in the proposed system. This group included representatives from CDC and an Advisory Group of representatives from the PRC's and URC's. As a follow-up to that initial meeting,

a Delphi Study was planned to move the group towards consensus on a number of issues relative to **Prevention Effects**.

## Methods

### Delphi Process

A Delphi process was chosen because it allows people who are not in the same room to come to consensus on some issue of importance. The Delphi process also ensures that all participants have an equal voice in the outcome because they do not experience the interpersonal dynamics that occur in an in-person meeting. This aspect was particularly important in this effort because the respondents ranged from community organizers to research academicians.

### Participants

The initial group invited to participate in the Delphi process were attendees of a meeting to discuss the form and function of the proposed knowledge management system, including CDC representatives (N=10) and members of the PRC Knowledge Management Advisory Group (N=5). In order to get input from a broad range of people who were potential users of the system, the 15 meeting attendees and two advisory group members who could not attend the meeting were asked to nominate researchers and front-line community health workers to invite to participate in the Delphi process. The nominations were based on willingness to respond and capacity to represent some segment of the intended audience for **Prevention Effects**. A total of 35 people were nominated as well as 8 members of the PRC Steering Committee. Two of the nominees were also on the PRC Steering Committee; therefore 58 people were invited to participate in the Delphi process.

### Online Data Collection

The Public Health Informatics Research Laboratory has conducted a number of online Delphi Studies. We prepared survey instruments using html-based "forms." The survey was deployed on a research-oriented website with links to further information about Delphi studies. Participants used a hyperlink to access the online form. Only those who used the correct username and password were able to view and complete the survey.

Rather than using a "mailto" strategy to return the forms via email, we used a cgi-bulkmail program so users did not have to be at a computer configured for Internet mail. Irrespective of computer or browser configurations, anyone having access to the World Wide Web could submit survey responses. Further, the cgi-based bulkmail program automatically stripped unwanted information from a return and entered the respondent's answers directly into a database on the server-side. This strategy also allowed anonymous survey completion.

Participants were asked to respond to any or all of the three rounds of surveys because the timeframe was limited. In follow-up rounds of Delphi studies, it is customary for participants to see how their responses compare to the responses of other participants. Because participants could respond to any or all of the three rounds, the follow-up questionnaire did not include individual ratings. Instead, participants could view their responses to the previous questionnaire by using a hyperlink with a randomly assigned participant number.

## **Instrumentation**

### **Round One Survey Form**

The first round of the PRC Online Delphi Survey was designed to gather basic information building on a brainstorming session at an in-person meeting described above. At that meeting the participants were asked to identify components that they felt would be important to the success of Prevention-Effects. In all, 32 unique ideas were proposed. These initial 32 were broken up into two different groups of system components: (1) Functions of the proposed system - i.e., capabilities the system would have to address the needs of its intended users; and (2) Output / Content - i.e., information that the system would contain, and / or ways the system would provide that information to its intended users.

Exhibit

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([http://www.phi.umd.edu/research/final\\_prc\\_delphi\\_forms/prc\\_round\\_1.html](http://www.phi.umd.edu/research/final_prc_delphi_forms/prc_round_1.html))

shows a copy of the Round 1 Survey Instrument.

The instrumentation for Round One consisted of four components:

1. Rating the importance of each of the original 15 functions proposed during the initial brainstorming session on a five-point scale as described below\*;
2. Making recommendations for additional functions to be considered for P-E;
3. Rating the importance of each of the original 17 output / content types identified during the initial brainstorming session;
4. Making recommendations for additional functions to be considered for P-E.

\*Rating was done on a five-point Likert type scale:

- 1 = Not important at all
- 2 = Somewhat important
- 3 = Moderately important
- 4 = Very important
- 5 = Extremely important

Each item in components 1 and 3 had a default response checked, NR for "no response." Each respondent was allowed to leave an NR if they chose. When ratings were analyzed, means and standard deviations for each item were computed. NR was treated as missing data, but the pattern of NR responses was noted in the analysis of the raw data.

### **Round Two Survey Form**

The first step in creation of the questionnaire for round two was to compile the findings from round one. See Exhibit 3 ([http://www.phi.umd.edu/research/final\\_prc\\_delphi\\_forms/prc\\_round\\_2.html](http://www.phi.umd.edu/research/final_prc_delphi_forms/prc_round_2.html)) for a copy of the Round 2 Survey Questionnaire. Further analysis was not undertaken, and the preliminary results were not interpreted beyond what is stated below. Delphi techniques are designed to bring groups to consensus. To that end, a second round was constructed which had seven components: \*

1. Re-rating the importance of each of the original 15 functions with knowledge of the respondent's original rating for each item as well as the group's mean rating and standard deviation;
2. Rating the importance of the newly recommended functions identified from Round 1 responses;
3. Making final recommendations for additional functions to be considered for P-E;
4. Re-rating the importance of each of the original 17 output/content items with knowledge of the respondent's original rating for each item as well as the group's mean rating and standard deviation;
5. Rating the importance the newly recommended output/content types identified from Round 1 responses;
6. Making final recommendations for additional functions to be considered for P-E.; and
7. Making specific recommendations to the following questions:
  - a. Who are 3 prevention research practitioners (name / contact information) we should interview or profile to develop valuable vignettes on the demands and solutions in prevention research practice?

- b. What are 3 applied prevention research projects (name / contact information) that should be profiled to reveal the important information that does not reach the published literature or evaluation reports (e.g., problems, barriers, unintended consequences, what does not work)?

\*In all cases rating was done on the same five-point Likert type scale used in Round One.

Because of the technology used, one day after Round One was closed, the Round Two survey instrument was ready to be fielded. A key component of this second round included providing feedback to each respondent, including their own Round One responses, as well as the group means and standard deviations for each item rated. The Round Two questionnaire displayed these group measures of central tendency next to the item statement.

A hyperlink was created in the Round Two survey to each of the round one responses so respondents who responded to Round One could review their individual feedback before responding to the second round questionnaire. On clicking the hyperlink, the respondent could review his or her ratings in a separate browser window. These responses were keyed to a respondent code known only to the investigators and contained no personal identifying information. If a Round Two respondent clicked on an inappropriate code hyperlink, they would see raw data but have no way to identify the respondent.

### **Round Three Survey Form**

As before, the initial step in the creation of the round three form was to compile the findings from round two. Again, further analysis was not undertaken, nor were the preliminary results interpreted beyond what is stated below. Given these constraints, a third round questionnaire was constructed which had two principal tasks

1. To prioritize both the functions and the output / content. This prioritization was completed with a straight vote by each respondent on the top ten elements from both lists. With knowledge of the means and standard deviations for each of the importance ratings generated in rounds one and two, each respondent was asked to vote on the top ten functions that should be developed in the first iteration of **Prevention Effects**, and the top ten content elements that the system should provide in its first iteration.
2. To identify the principal questions one might ask of the expert researchers and practitioners identified in round 2 and kinds of information that should be gathered about the exemplary programs identified in round 2. To that end, each respondent was asked to submit questions they would ask if given the chance.

As in Round Two, each respondent had a user ID - and with that ID could reach through hyperlinks in the questionnaire itself their Round One and Round Two individual choices. An additional hyperlink was included in the questionnaire that would allow each respondent to examine the list of experts and exemplary programs generated from second round responses. Finally, the technology allowed us to close out the survey at a specified time. Further, the technology allowed each respondent to see, on demand, their earlier responses to specific questions from any previous round. Exhibit 4 ([http://www.phi.umd.edu/research/final\\_prc\\_delphi\\_forms/prc\\_round\\_3.html](http://www.phi.umd.edu/research/final_prc_delphi_forms/prc_round_3.html)) contains a copy of the Round 3 Survey Questionnaire.

## Results

### Overview of Respondents

We began with an initial pool of approximately 30 invitees. Because of heightened interest in both the project and the methodology used for the Delphi study, those originally invited continued to nominate new participants for both Round Two and Round Three. Overall, 40 people responded to at least one of the three rounds, with 28 respondents for Round One, 30 respondents for Round Two, and 29 respondents for Round Three. Exhibit 5 contains a summary of the response patterns among the 40 participants. On examination of Exhibit 5 it can be seen that 42.5% of the respondents participated in all three rounds, but it is important to add that among those respondents in Round One, 82.1% completed at least two rounds, and 60.7% completed all three rounds.

### Exhibit 5 Response Patterns for Delphi Participants

Response Patterns	Percent of Respondents	Percent of Invitees
To all 3 rounds	42.50%	29.31%
To only 2 rounds	32.50%	22.41%
To only 1 round	25.00%	17.24%
Total	100.00%	68.97%

### System Function

Exhibit 6 contains a summary of the functions, listed in order of vote preferences from the third round. The list is in descending order - from the function that received the most votes to the function receiving the least votes. Provided in this table as well are the importance ratings (means and standard deviations) from Rounds 1 and 2.

**Exhibit 6 Importance Ratings and Final Voting on Functions**

Functions	Round 1 X (s.d.) N=28	Round 2 X (s.d.) N=30	Priority Vote % N=29
Providing a system that is user friendly to both practitioner and community-based organization audiences.	N/A	4.8 (0.4)	92.86%
Formatting language, content, and other materials to user needs (e.g., specifically delivering information in a format that is most able to be used).	4.5 (0.8)	4.6 (0.8)	85.71%
Including descriptors that indicate what kind of information and what standards of evidence went into a report (e.g., stating whether the information is anecdotal, from controlled experiments, etc.).	4.4 (0.8)	4.5 (0.6)	82.14%
Determining what the user wants to gain from the system (e.g., needs for information, guidance on activities / interventions).	4.4 (0.9)	4.6 (0.6)	75.00%
Organizing content by descriptive information - key words, etc.	N/A	4.3 (0.7)	67.86%
Allowing the user to download the information to a disk/hard drive or into a word processing software.	N/A	4.3 (0.9)	60.71%
Ensuring confidentiality / privacy of users and of the information they provide.	N/A	4.4 (0.9)	58.62%
Allowing users to "browse" the system, when they do not have a particular need or question (e.g., let them explore what kinds of information are in the database).	N/A	4.2 (0.8)	57.14%
Providing links to journals and other on-line databases (e.g., American Journal of Public Health online, ERIC, etc.).	4.1 (0.9)	4.3 (0.9)	53.57%
Providing a mechanism for users to give feedback about how they used the information they got from the system (e.g., intervention implementation and effects) so that context and strategies can be added to the knowledge base over time.	N/A	4.1 (1.0)	50.00%

**Exhibit 6 Importance Ratings and Final Voting on Functions (Continued)**

Functions	Round 1 X (s.d.) N=28	Round 2 X (s.d.) N=30	Priority Vote % N=29
Providing an opportunity for the user to rate the value of the information provided (e.g., based on assessment of how well the information addressed their needs / characteristics, users would add value to the information by rating it like Consumer Reports).	4.0 (1.0)	4.1 (0.9)	50.00%
Maintaining a taxonomy of diseases/health behaviors/ and interventions to facilitate the navigation of Prevention Effects.	N/A	4.1 (0.7)	50.00%
Providing technical assistance and tutorials (e.g., help files, online courses and training activities).	3.9 (1.1)	4.0 (0.8)	32.14%
Connecting a user to others with similar interests (e.g., providing contact information for individuals who are able / willing to provide additional information and support on a given topic).	3.8 (1.1)	3.7 (1.0)	32.14%
Soliciting information from experts (researchers and community members) about resources required, constraints, and effectiveness.	N/A	3.9 (0.9)	28.57%
Providing multiple standards for rating and evaluating entries so innovative approaches to research and practice can be identified.	N/A	3.7 (0.9)	25.00%
Interpreting results so that they are more understandable to the user (e.g., add value through automated interpretation).	3.6 (1.2)	3.8 (0.8)	25.00%
Linking information with existing theory and evidence regarding that theory.	N/A	3.7 (1.2)	25.00%
Providing a clearly defined procedure through which users enter new information into the system (e.g., how users can contribute their information, materials, etc., including uploading, inputting, and the review process).	N/A	3.9 (1.0)	21.43%
Providing direct connections to online prevention resources like publishing companies (e.g., Hazelden) or groups (e.g., Florida tobacco resources).	N/A	3.8 (0.9)	21.43%

**Exhibit 6 Importance Ratings and Final Voting on Functions (Continued)**

Functions	Round 1 X (s.d.) N=28	Round 2 X (s.d.) N=30	Priority Vote % N=29
Providing a technical assistance / help mechanism (e.g., examples, comparisons, equations) to increase understanding of the economic components of programs (e.g., differences among cost benefit, cost effectiveness, and cost utility calculations).	N/A	3.7 (1.0)	21.43%
Separating important information from the unimportant (e.g., separating information based on some specific classification rules).	3.9 (1.0)	3.9 (0.8)	17.86%
Providing an opportunity for users to input/upload information as appropriate.	N/A	3.8 (1.2)	17.86%
34. Providing tutorials demonstrating how the functions of the system could best be used.	N/A	4.0 (0.9)	14.29%
Linking to evidence based on a range of anecdotal vs. quasi-experimental vs. experimental types of evidence.	N/A	3.6 (1.0)	14.29%
Reporting to users who provide information to the system how their information is used by others (e.g., those who contribute information will get semi-annual reports on who has requested and used their information).	3.5 (1.1)	3.5 (0.9)	14.29%
Filtering information based on assessment of user needs / characteristics (e.g., trying to deliver only information specifically targeted to the user).	3.3 (1.4)	3.3 (1.0)	14.29%
Determining what grant opportunities would apply to the user's interests (e.g., generate a list of grants that could fund the interventions/prevention practices that are of interest to the user; and provide a direct link to funding opportunities).	N/A	3.6 (1.3)	10.71%
Providing real-time interactive sessions for user discussion (e.g., facilitation of focused "chats" that bring users with shared interests together at the same time for group discussion and rapid situation assessment).	N/A	3.2 (1.2)	10.71%

**Exhibit 6 Importance Ratings and Final Voting on Functions (Continued)**

Functions	Round 1 X (s.d.) N=28	Round 2 X (s.d.) N=30	Priority Vote % N=29
Determining what the user intends to do with the information (e.g., to be used for immediate application in interventions; as background for further research).	3.9 (0.9)	3.8 (0.8)	7.14%
Profiling of user characteristics in real time (e.g., using information about user demographic and other characteristics to tailor feedback while in the same session, rather than waiting to do an analysis for use in the next time).	3.4 (1.2)	3.3 (0.9)	7.14%
Conducting anonymous user profiling (e.g., determining certain user characteristics based on how the users navigate through the system and how they construct queries rather than on responses to questions).	3.3 (1.2)	3.0 (1.0)	7.14%
Providing feedback "loops" from the system to the user (e.g., email message ~ "since the last time you used the system, some new information has been added that may be of interest to you").	N/A	3.6 (1.2)	3.57%
Profiling user needs during a session (e.g., using information about user needs in the same session, rather than waiting to do an analysis of user needs for the next session).	3.4 (1.0)	3.1 (1.0)	3.57%

A few general observations are in order. First, functions for which "N/A" is listed under Round 1 were not included in the Round 1 questionnaire but were proposed by respondents during Round 1. These then became part of the Round 2 questionnaire. Second, the consensus process would appear to work if the variability in importance ratings decreased in Round 2 compared with Round 1. An examination of the standard deviations among those items found in both Round 1 and Round 2 suggest that this tendency was borne out in almost all cases (12 out of 15 cases - 80%). Third, a high level of correspondence should exist between the Round 2 importance ratings and the voting in Round 3 on whether a function should be delivered in the first version of **Prevention Effects**. While there is a high level of correspondence, one should not consider a less than perfect correspondence unusual - in part because there is a distinction between "importance" and whether the function is feasible or desirable in the first iteration of the knowledge management system.

The results outlined in Exhibit 6 illustrate that at least 50 percent of the final round respondents identified 12 of the functions that should appear in **Prevention Effects** Version 1.0. The most highly rated function - that the system should be user friendly - is telling and a basic assumption of system design. The remaining 11 of these functions seem to be organized along three different lines:

1. **Organizational structure:** descriptors based on standards of evidence, organizing content by descriptive information, taxonomy based on diseases / health behaviors;
2. **User centered:** formatting to user needs, determining user needs, user download capability, user privacy / confidentiality, user browsing;
3. **Adding value to existing information:** providing links to additional information, mechanism for user feedback, users rating value of information.

If we include the top functions recommended by about a third of the respondents, we add two more functions to this list: 1) Providing technical assistance and tutorials (which aligns clearly with user centeredness); and 2) Connecting a user with others with similar interest (aligns with adding value to existing information).

### **Comparisons Between Advisory Committee and Subsequent Invitees**

If we look at the opposite end of the list for functions to be added Version 1.0, we find a group of functions that are all related to understanding who the user is and what the user intends to do with the information (determining what the user intends to do with the information through profiling user needs during a session). This raised a question in our minds because 4 of the last 5 voted functions were all recommended as potential functions during the initial planning meeting with the Advisory Committee. As a result, we examined the responses of the two groups (those who participated in the Advisory Committee meeting with those invited to participate in the Delphi following the meeting) in two ways. We first compared the final Round 2 importance ratings (t-test for independent groups) and then examined the voting patterns in Round 3.

Exhibit 7 contains a summary of these comparisons. When comparing the final mean ratings from Round 2 for the intended functions for **Prevention Effects**, all but two were similar. The only two that were significantly different among these groups were "Profiling user needs during a session" and "Determining what grant opportunities would apply to the user's interests." The former was rated significantly more important by the Advisory Committee, the later significantly more important by the Invitees.

**Exhibit 7 Comparison Of Importance Ratings On Functions Between Advisory Committees and Subsequent Invitees To Delphi Panel**

<b>Function</b>	<b>Advisory Comm. Mean/Std Dev</b>	<b>Invitees Mean/Std Dev</b>	<b>p- value*</b>
Profiling user needs during a session	4.1/0.4	3.0/0.9	.00
Determining what grant opportunities would apply to the user's interests	2.8/1.3	3.9/1.2	.05

\*p value based on two-tailed t-test for independent groups

Exhibit 8 contains a listing of the top 10 functions according to votes of the entire panel responding to Round 3. Included also in the Exhibit is the voting record for both groups - Advisory Committee members and subsequent Invitees to the Delphi panel. Each of the sets of voting results is based on at least 50 percent of the panel voting for a specific function. For example, "Allowing a user to 'browse' the system received at least 50 percent of the entire panel's Round 3 votes and at least 50 percent of the Invitees' votes, but did not receive 50 percent of the votes of the Advisory Committee.

On examination of Exhibit 8, one can see that the voting patterns were similar, though the cumulative vote order was slightly different between the two groups. For example, several functions that were supported for **Prevention Effects** Version 1.0 by the Invitees were not supported by at least 50 percent of the Advisory Committee: content organized by descriptive information; user downloads; user rating of value of information. Only one of the functions supported by the Advisory Committee for **Prevention Effects** Version 1.0 (taxonomy) was not supported by at least 50 percent of the Invitees.

**Exhibit 8 Comparative Voting For Version 1 Prevention Effects  
Functionality Between Advisory Committee and Delphi Invitees**

<b>Function</b>	<b>Overall Vote Order</b>	<b>Advisory Committee Vote Order</b>	<b>Invitee Vote Order</b>
Providing a system that is user friendly to both practitioner and community-based organization audiences.	1	2	1
Formatting language, content, and other materials to user	2	2	2
Including descriptors that indicate what kind of information and what standards of evidence went into a report	3	1	4
Determining what the user wants to gain from the	4	4	4
Organizing content by descriptive information - key words, etc.	5		8
Allowing the user to download the information to a disk/hard drive or into a word processing software.	6		3
Ensuring confidentiality / privacy of users and of the information they provide.	7	4	6
Allowing users to "browse" the system, when they do not have a particular need or	8		10
Providing links to journals and other on-line databases	9		7
Providing a mechanism for users to give feedback about how they used the information they got from the system so that context and strategies can be added to the knowledge base over time.	10	6	9
Providing an opportunity for the user to rate the value of the information provided	10		10
Maintaining a taxonomy of diseases/health behaviors/ and interventions to facilitate the navigation of Prevention Effects.	10	6	

## Output / Content Elements

Exhibit 9 contains a summary of the output / content (elements), listed in order of vote preferences from the third round. The list is in descending order - from the element that received the most votes to the element receiving the least votes. Provided in this table as well are the importance ratings (means and standard deviations) from Rounds 1 and 2.

A few general observations are in order. First, elements for which "N/A" is listed under Round 1 were not included in the Round 1 questionnaire but were proposed by respondents during Round 1. These then became part of the Round 2 questionnaire. Second, as with the functions above, the variability in importance ratings were reduced in Round 2 when compared with Round 1, giving evidence that the consensus process is working. A reduction in the standard deviations among those items found in both Round 1 and Round 2 was borne out in fewer cases than among the functions (here 12 out of 17 cases - 71%) but still among a majority of elements. Unlike the ratings of the functions, one of these elements (Describing the kinds of interventions that exist related to a theme) had an "increase" (though insignificant) in variability from Round 1 to Round 2. Third, as with the functions above there should be a high level of correspondence between the Round 2 importance ratings and the voting in Round 3 on whether an element should be delivered in the first version of **Prevention Effects**. However, a less than perfect correspondence should not be considered unusual because of the difference in rating "importance" and selecting elements for inclusion in the first version of the knowledge management system.

### Exhibit 9 Importance Ratings and Final Voting on Output Content Elements

Output / Content	Round 1 X (s.d.) N=28	Round 2 X (s.d.) N=30	Priority Vote % N=29
Describing what happened (e.g., completely describing the results of research or community intervention actions).	4.5 (0.6)	4.7 (0.5)	89.29%
Describing barriers and their solutions. (e.g., the factors that hindered the planning, implementation or evaluation of programs / interventions).	4.6 (0.6)	4.6 (0.6)	85.71%

**Exhibit 9 Importance Ratings and Final Voting on Output Content Elements (Continued)**

<b>Output / Content</b>	<b>Round 1 X (s.d.) N=28</b>	<b>Round 2 X (s.d.) N=30</b>	<b>Priority Vote % N=29</b>
Describing what works and how it can be made to work in your community. (e.g., guidance on how to adapt or modify programs / interventions to tailor them to other communities).	4.5 (0.7)	4.6 (0.6)	82.14%
Describing what has been tried. (e.g., even if a research project or program intervention has not worked).	4.5 (0.7)	4.6 (0.6)	78.57%
Including interventions aimed at a broad spectrum of health conditions or at promoting health (e.g., economic, educational, community building) when describing content/topic-related interventions.	N/A	4.6 (0.6)	74.07%
Providing information on the sustainability of interventions and on strategies for sustaining them after initial grant funding runs out.	N/A	4.6 (0.7)	71.43%
Describing unintended consequences of actions. (e.g., feedback about outcomes / consequences of research or intervention actions).	4.5 (0.7)	4.6 (0.6)	64.29%
Providing the outcomes of prevention programs (data) in forms that are usable within lay community groups.	N/A	4.4 (0.7)	60.71%
Describing what does / does not work (e.g., not only program / interventions as a whole, but the component parts).	4.3 (0.9)	4.5 (0.7)	57.14%
Describing how challenges are dealt with. (e.g., the ways in which those responsible for research or programs interventions met challenges).	4.5 (0.6)	4.5 (0.6)	53.57%
Describing intervening variables and events that influence success / failure. (e.g., a contextual description of the variety of factors influencing success).	4.3 (0.7)	4.3 (0.6)	42.86%
Describing the cost of recommended actions. (e.g., the aggregate costs of programs / interventions in terms of time and resources).	4.1 (0.7)	4.3 (0.7)	35.71%

**Exhibit 9 Importance Ratings and Final Voting on Output Content Elements (Continued)**

<b>Output / Content</b>	<b>Round 1 X (s.d.) N=28</b>	<b>Round 2 X (s.d.) N=30</b>	<b>Priority Vote % N=29</b>
Providing information on the effectiveness of locally sustained and operated interventions as well as interventions managed by well-funded, scientist-administered demonstration projects.	N/A	4.4 (0.8)	32.14%
Providing a discussion/description of how the prevention effort selected by the user translated policy into practice or research into practice.	N/A	4.1 (1.0)	32.14%
Detailing existing research projects or program efforts, and who is doing them. (e.g., someone who can describe programs based on a vignette from their community).	4.3 (0.8)	4.3 (0.6)	28.57%
Describing the kind of interventions that exist related to a theme. (e.g., interventions that are content / topic specific).	4.4 (0.8)	4.3 (0.9)	28.57%
Describing innovative programmatic spin-offs from research or previous action strategies. (e.g., what someone did to adapt or modify an existing program / intervention in response to an unexpected barrier).	4.3 (0.9)	4.3 (0.7)	28.57%
Describing how to develop and sustain a community coalition. (e.g., what are all the factors that influence the potential for success and maintenance).	4.0 (1.1)	4.2 (0.8)	25.00%
Providing specific feedback on the context and process variables that underlie successful dissemination of programmatic interventions.	N/A	4.1 (0.7)	25.00%
Providing other community organization strategies such as direct action community organizing which may be more effective than coalitions.	N/A	4.1 (0.9)	25.00%
Describing how long recommended actions take. (e.g., what were the actions and how long did they take to happen in an applied setting).	4.3 (0.7)	4.2 (0.7)	21.43%

**Exhibit 9 Importance Ratings and Final Voting on Output Content Elements (Continued)**

<b>Output / Content</b>	<b>Round 1 X (s.d.) N=28</b>	<b>Round 2 X (s.d.) N=30</b>	<b>Priority Vote % N=29</b>
Providing information in a matrix on how sensitive the implementation, impact, and outcomes of interventions may be to their context (e.g., culture, policy environment, socio-economic factors, mix of other interventions, systems structure and function, existing social capital, stage of coalition development, and organizational and community capacity).	N/A	4.1 (1.0)	21.43%
Describing in detail how to do a recommended service. (e.g., what are all the tasks and subtasks in order to provide a specific program / services).	4.0 (1.0)	4.0 (0.6)	21.43%
Providing evidence based on ratings of resources required, costs, likely constraints, likely effectiveness from a panel of experts (both researchers and community members) who make their values and theoretical assumptions explicit.	N/A	3.8 (1.1)	21.43%
Providing information on who else is asking the same questions. (e.g., names of individuals, institutions who are examining the same or similar issues).	3.7 (1.1)	3.8 (1.0)	17.86%
Providing a user with an option of receiving information (references) on the most frequently used sources by others who have tried to address similar questions.	N/A	3.8 (1.2)	17.86%
Describing strategies for identification, cataloging, and measurement of the many contextual and process facets of a successful program so we know what works and why.	N/A	4.1 (0.9)	14.29%
Providing links to international prevention practices that may assist those community agencies that are working with recent immigrant populations (which should also include email contacts, websites, etc.).	N/A	4.0 (0.8)	14.29%

**Exhibit 9 Importance Ratings and Final Voting on Output Content Elements (Continued)**

Output / Content	Round 1 X (s.d.) N=28	Round 2 X (s.d.) N=30	Priority Vote % N=29
Describing inter / intra -organizational changes that occur. (e.g., the resulting organizational change from programmatic actions taken).	4.1 (0.9)	4.0 (0.7)	10.71%
Providing information on how to incorporate context-dependent interventions into a "learning system" that adapts them to unique community contexts, and to changes in this context over time.	N/A	3.9 (1.0)	10.71%
Providing guidance on processes (e.g., programmatic and research), which allow a user to appropriately respond to a public health problem.	N/A	3.9 (0.9)	10.71%
Providing a graphical representation of previous efforts on a given topic as a map (e.g., for each related effort the map might include: relative success, duration, contact information for leaders, and pointers to research outputs).	N/A	3.7 (1.0)	10.71%

The results outlined in Exhibit 9 illustrate that at least 50 percent of the final round respondents identified 10 of the elements that should appear in **Prevention Effects** Version 1.0. To give us some preliminary guidance grouping these 10 elements we ran a principal components analysis on the final vote patterns. This analysis was done purely for descriptive rather than analytic purposes. The results returned two interpretable groupings among 8 of the ten elements. These groupings can be found in Exhibit 10.

**Exhibit 10 Principal Components Grouping Of Final Round Votes For Output / Content Elements\***

<b>Output / Content</b>	<b>Group 1</b>	<b>Group 2</b>
Describing what happened (e.g., completely describing the results of research or community intervention actions)		0.932
Describing barriers and their solutions. (e.g., the factors that hindered the planning, implementation or evaluation of programs / interventions)		0.842
Describing what works and how it can be made to work in your community. (e.g., guidance on how to adapt or modify programs / interventions to tailor them to other communities)		
Describing what has been tried. (e.g., even if a research project or program intervention has not worked)	0.657	
Including interventions aimed at a broad spectrum of health conditions or at promoting health (e.g., economic, educational, community building) when describing content/topic-related interventions		0.595
Providing information on the sustainability of interventions and on strategies for sustaining them after initial grant funding runs out		0.635
Describing unintended consequences of actions. (e.g., feedback about outcomes / consequences of research or intervention actions)	0.673	
Providing the outcomes of prevention programs (data) in forms that are usable within lay community groups		
Describing what does / does not work (e.g., not only program / interventions as a whole, but the component parts)	0.796	
Describing how challenges are dealt with. (e.g., the ways in which those responsible for research or programs interventions met challenges)	0.846	

\*Coefficients in Columns 2 and 3 are final rotated principal components loadings

As illustrated in Exhibit 10, two groupings appear to comprise 8 of the 10 elements. The first group generally included information regarding what might reasonably be expected to happen as a result of planned programmatic and

research efforts, and the second group appeared to have more to do with unexpected consequences and barriers to success.

### **Comparisons Between Advisory Committee and Subsequent Invitees**

As with the functions, we examined the responses of the two groups (those who participated in the Advisory Committee meeting and those invited to participate in the Delphi following the meeting) in two ways. First, we compared the final Round 2 importance ratings (t-test for independent groups), and then we examined the voting patterns in Round 3.

Exhibit 11 contains a summary of these comparisons. When comparing the final mean ratings from Round 2 for the intended output / content elements for **Prevention Effects** all but four were similar. The four that were significantly different among these groups were

1. "Describing what has been tried,"
2. "Describing intervening variables and events that influence success / failure,"
3. "Providing information on who else is asking the same questions," and
4. "Providing specific feedback on the context and process variables that underlie successful dissemination of programmatic interventions."

The first and third were rated significantly more important by the Advisory Committee, the second and fourth significantly more important by the Invitees. These data are summarized in Exhibit 11.

**Exhibit 11 Comparison Of Importance Ratings On Output / Content Elements Between Advisory Committees and Subsequent Invitees To Delphi Panel**

<b>Function</b>	<b>Advisory Comm. Mean/Std Dev</b>	<b>Invitees Mean/Std Dev</b>	<b>p- value</b>
Describing what has been tried	4.9/0.4	4.5/0.6	.04
Describing intervening variables and events that influence success / failure.	4.0/0.5	4.5/0.5	.05
Providing information on who else is asking the same questions	4.4/0.7	3.7/0.9	.05
Providing specific feedback on the context and process variables that underlie successful dissemination of programmatic interventions	3.7/.5	4.3/0.7	.02

\*p value base don two-tailed t-test for independent groups

Exhibit 12 contains a listing of the top 10 output / content elements according to votes of the entire panel responding to Round 3. Included also in the Exhibit is the voting record for both groups - Advisory Committee members and subsequent Invitees to the Delphi panel. Each of the sets of voting results is based on at least 50 percent of the panel voting for a specific function. For example, "Describing unintended consequences of actions" received at least 50 percent of the entire panel's Round 3 votes and at least 50 percent of the Invitees' votes, but it did not receive 50 percent of the votes of the Advisory Committee.

On examination of Exhibit 12 it becomes clear that the voting patterns were more dissimilar than the voting on functions. Only five of these elements received at least 50 percent of both groups - with the Invitee group voting for all 10 of the overall top ten elements.

**Exhibit 12 Comparative Voting For Version 1 Prevention Effects Output / Content Elements Between Advisory Committee and Delphi Invitees**

<b>Output / Content Element</b>	<b>Overall Vote Order</b>	<b>Advisory Committee Vote Order</b>	<b>Invitee Vote Order</b>
Describing what happened (e.g., completely describing the results of research or community intervention actions).	1	2	1
Describing barriers and their solutions. (e.g., the factors that hindered the planning, implementation or evaluation of programs / interventions)	2	1	5
Describing what works and how it can be made to work in your community. (e.g., guidance on how to adapt or modify programs / interventions to tailor them to other communities)	3	2	2
Describing what has been tried. (e.g., even if a research project or program intervention has not worked)	4	4	5
Including interventions aimed at a broad spectrum of health conditions or at promoting health (e.g., economic, educational, community building) when describing content/topic-related interventions.	5	4	2
Providing information on the sustainability of interventions and on strategies for sustaining them after initial grant funding runs out.	6		7
Describing unintended consequences of actions. (e.g., feedback about outcomes / consequences of research or intervention actions)	7		4
Providing the outcomes of prevention programs (data) in forms that are usable within lay community groups.	8		10
Describing what does / does not work (e.g., not only program / interventions as a whole, but the component parts).	9		9
Describing how challenges are dealt with. (e.g., the ways in which those responsible for research or programs interventions met challenges)	10		8

## Prevention Practitioners and Applied Programs

Respondents in Round 2 were asked to provide suggestions of prevention practitioners who were in a unique position to add information to **Prevention Effects**. As part of the Round 3 questionnaire all respondents had the option of seeing the list of recommended prevention practitioners generated in Round 2. Respondents were then asked "What questions would you like to have these prevention practitioners respond to?". This was posed in the context of adding additional information to the database of knowledge objects to be created for **Prevention Effects**. Exhibit 13 contains the list of prevention research / practitioners generated in Round 2. Exhibit 14 contains the follow-up questions generated in Round 3.

<b>Exhibit 13: Recommended Prevention Research Practitioners</b>
• Amanda Aguirre, Western AZ Area Health Education Center
• Moon Chen, Ohio State University
• Sandra Ciske, Seattle Urban Research Center
• Alwyn Cohall, Columbia School of Public Health
• Carol Cornell, University of Alabama, Birmingham
• Sally Davis, University of New Mexico
• Jill DeZapien, University of Arizona
• Colleen Dilorio, Rollins School of Public Health
• Geni Eng, University of NC, Chapel Hill, N. C., School of Public Health
• Jean Forster, University of Minnesota
• Nick Freudenberg, Professor, Hunter College
• Bookda Gheisar, Seattle Urban Research Center
• Robert Gold, University of Maryland
• Robert Goodman, Tulane University School of Public Health and Tropical Medicine
• Rocardo Gutzman, Detroit Urban Research Center community member
• Maia Ingram, Rural Health Office, Tucson, Arizona
• Barbara Israel, University of Michigan, Ann Arbor
• Kelli Komro, University of Minnesota
• Matthew Kreuter, St. Louis University
• Julian Lipscher, Julian, Tobacco Control Coordinator, Hawaii Department of Health
• Julie Marshall, University of Colorado Health Science Center
• Jose Masso, Northeastern University
• Jean McClelland, Rural Health Office, Tucson, Arizona
• Robert McGranaghan, Detroit Urban Research Center

**Exhibit 13 (Continued): Recommended Prevention Research Practitioners**

• Ilan Meyer, Columbia School of Public Health
• Meredith Minkler, University of CA at Berkeley, School of Public Health
• Jeffrey Morenoff, Dept of Sociology, University of Michigan
• Eva Moya, Rural Health Office, Tucson, Arizona
• Diane Pien, Planning and Development Specialist, Human Services Dept, Div of Youth and Family Services,
• Alonzo Plough, Seattle-King County Department of Public Health
• Jim Raczynski, University of Alabama, Birmingham
• Ken Resnecow, Rollins School of Public Health
• Peggy Shepard, West Harlem Environment Action (WE ACT)
• Claire Sterk, Rollins School of Public Health
• Nicolette Teufel-Shone, University of Arizona, 520-321-7776
• Nancy Van Devanter, Columbia School of Public Health
• Delia West, University of Alabama, Birmingham
• David Williams, University of Michigan
• Carolyn Williams, U of Minnesota

**Exhibit 14 Listing of Questions For Prevention Practitioners**

- Are these two individuals really two different types of people (i.e. researcher=academic, practitioner=administrator or outreach worker)?
- Are you confident that you are aware of most or all recent and on-going research that could significantly contribute to your research?
- Could they provide copies of published and unpublished manuscripts describing their approaches, programs, and process of prevention?
- Could they provide materials from their programs? How?
- For Jim Raczynski (ENRICHD): "What effect did Cognitive Therapy have on Alabama heart attack participants' depression and/or perceived sense of social support?"
- For those who are not in academic setting, how does one access prevention research information?
- How do you verify important findings in your research?
- How easy is it to find and contact other researchers in your field?
- How easy is it to find and contact researchers in other fields that might have insights beneficial to your research?
- How likely is it that researchers in other fields could have significant insights to problems that you face?
- How often do you meet or talk with other researchers in your field?
- How valuable are the experiences of other researchers in your field?
- If so, describe it. To what extent can prevention be standardized and to what extent is it or should it be specific?

**Exhibit 14 (Continued) Listing of Questions For Prevention Practitioners**

- Is it important to discuss your ideas with other knowledgeable people before drawing final conclusions?
- Is there such a thing as good prevention?
- The questions you ask these folks will be driven by the core elements of the systems--if barriers are something that the system will allowed to be searched then the prevention researchers will need to be asked:
- To what extent does proximity to fellow researchers influence your professional dialogues with them. Is it valuable to interact with more than one fellow researcher at one time? (i.e. Are group discussions valuable?)
- What characteristics of the information you seek make it valuable? (e.g., it comes from a credible source, it is based on verifiable research, etc.)
- What does prevention mean to you?
- What is the difference between the researcher and the practitioner?
- Where do these individuals see gaps in linkage of prevention research and prevention practice?
- Why do you focus on prevention?

Similarly, each respondent was asked in Round 2 to identify exemplary applied programs they would recommend for PRC follow up in creation of the knowledge database. Subsequently in Round 3, each respondent was able to see the list of program recommended when asked to supply follow-up questions that might be asked of those programs. Exhibit 15 contains the list of exemplary applied programs generated in Round 2, and Exhibit 16 contains the follow-up questions suggested by Round 3 respondents.

**Exhibit 15 Recommended Applied Projects**

• American Cancer Society -- Collaborative Evaluation Fellows Project, Don Compton
• American Cancer Society Home Office, for examples of intervention/prevention projects within the American Cancer Society. Contact Don Compton.
• Appalachian Demonstration of NOT On Tobacco (N-O-T), Dr. Kim Horn, Office of Drug Abuse Intervention Studies, Prevention Research Center, Dept. of Community Medicine, WVU, Morgantown WVA
• Arthritis Foundation in Atlanta for projects with the Arthritis field. Contact Lisa Carlson, MPH.
• Asthma Community Intervention. Contact Patrick Kinney.
• Border Vision Fronteriza, Rural Health Office, Eva Moya or Howard Eng
• Children's Aid Society, Carmen La Luz Rivera, East Harlem Center

**Exhibit (Continued) 15 Recommended Applied Projects**

• Coalition for a Smoke-Free El Barrio, NYS Dept. of Health, Debbie Quinones
• Companeros in Douglass, Arizona
• East Harlem Healthy Heart Program, Barbara Brenner, Director of Community Relations, Mt. Sinai Hospital
• Effectiveness of comprehensive tobacco control programmes in reducing teenage smoking in the USA, Melanie Wakefield and Frank Chaloupka, ; 9: 177-186.
• ENRICHED, Jim Raczynski
• Girls Rule, Kristine Kelsey, PI
• Gonorrhoea Community Action Project, GCAP Nancy VanDevanter
• Good Health Project Becky Olson Sylva, NC
• Health Works for Women: Marci Campbell, PI
• Hillscapes Project. Contact Robert and Mindy Fullilove.
• Hualapi Tribe's package of family camps and school intervention to promote physical activity, Dr. Teufel-Shone.
• Maternal Outreach. Contact Alan Cross
• Platicamos Salud Mariposa Community Health Center, Jo Jean Elenes.
• PRAISE! - Alice Ammerman.
• Santa Cruz Collaborative Diabetes Project, Teri Mendez and Gwen Gallegos
• SHOW, Delia West
• SIP-18, Carol Cornell
• Summary of 1998 Advertising Campaign Assessments, MA Dept. of Public Health, Tobacco Control Program
• The Hopi Foundation's community-based assets development intervention, Marilyn Masayeva
• Urban Research Centers Initiative, Epidemiology Program Office, CDC
• Washington Heights Healthy Heart Program. Contact Steve Shea.
• WISEWOMAN - Alice Ammerman.

### **Exhibit 16 Questions For Applied Projects**

- Description of programs, any process or outcome measures, population served, anecdotal outcomes, recommendations.
- For Carol Cornell (SIP-18) "What are some of the lessons learned from implementing a cardiovascular risk-reduction community health advisor (CHA) model?"
- How did your project's stated aims differ from its most valuable contributions?
- How do others inside and outside your own organization view the project that you've developed?
- How do you know if the program works--regardless if the methodology to evaluate the program is less rigorous or more primitive?
- How do you make it relevant and meaningful to the residents of the community?
- How much latitude do you think others might have in adapting this work to their setting without disrupting their chances for success?
- How were decisions made?
- If you were designing this project again, what issues would you pay more attention to than the first time around?
- Initially, interim results and progress reports with solutions to problems would be most important. implementation is a pain, how is it done.
- Under what circumstances would you be willing to share stories or examples of the things that didn't go as planned in this project?
- Were there non-health factors considered as crucial elements in the implementation of the program/project?
- What are the things that make you most proud of the project?
- What could have made that project better?
- What do they think are its most significant features?
- Why the project/practice was needed?

At this point, all identifiers other than name and affiliation have been removed from both the practitioner and applied programs list.

## Discussion

The purpose of the **Prevention Effects** Delphi Study was to gather data that would be of use in moving forward with establishing the scope, requirements, and expectations for the **Prevention Effects** Knowledge Management System. Because of the magnitude of the development effort and the size of the potential knowledge database it was assumed that some form of staging or phasing would be required. The size of the effort is complicated by the number of constituencies to be served in both its development and deployment.

At the current time, it is assumed that there are three primary audiences for **Prevention Effects**: 1) front line prevention personnel referred to here as practitioners, 2) prevention researchers initially affiliated with the CDC Prevention Research Centers / Urban Research Centers Program, and 3) policy makers likely to influence either the field or practice of prevention.

The study resulted in the generation and rating of 34 functions. Some of these functions overlapped, but clarity and separation came as we moved through Round 2 and 3. At the end of Round 3 we identified a dozen functions that at least 50 percent of respondents felt should be included in the first version of the knowledge management system. These functions were grouped into three broad categories:

1. **Organizational structure**: descriptors based on standards of evidence, organizing content by descriptive information, taxonomy based on diseases / health behaviors;
2. **User centered**: formatting to user needs, determining user needs, user download capability, user privacy / confidentiality, user browsing;
3. **Adding value to existing information**: providing links to additional information, mechanism for user feedback, users rating value of information.

As with the functions the importance ratings and final voting produced a set of 10 recommended output / content elements for the first version of **Prevention Effects**. These appeared to group into two broad categories of elements:

1. **Information regarding what might reasonably be expected to happen as a result of planned programmatic / research efforts**: what has been tried; what does / does not work; how challenges are dealt with; unintended consequences of actions

2. **The unexpected consequences and barriers to success: what happened following implementation;** barriers encountered and their solutions, broad spectrum interventions; sustainability of interventions.

If we take this as guidance for the purposes of staging it would suggest several things:

- The Advisory Committee, CDC, and the eventual vendor should pay close attention to the taxonomic structure, the methodologies to be used to create and maintain it, and on a structure for multiple standards of evidence attached to each information object.
- The user interface, technical assistance aids, and methods to ensure user privacy / confidentiality are essential elements of design consideration.
- There appears to be universal agreement on the importance of user feedback to add value to the system and to ensure that the system stays current and meaningful to the end users.
- The full range of information on a project, from its inception to institutionalization is important; but, crucial among the components of this knowledge is the capacity to explain the why and how - with attention to solutions to barriers to success.

There are several issues raised by the results. Perhaps the one that is intertwined with most of the intended functionality of the proposed **Prevention Effects** System is the issue of profiling the user. The results are clear that profiling is not perceived as one of the early priorities - and far from being viewed as the most important element of functionality. At least two competing explanations could benefit from follow-up examination:

1. End users are troubled by the potential threats raised to their privacy / confidentiality. A great many horror stories have appeared in today's media outlets about the hazards of online databases. When this is coupled with the prospect that a government agency is compiling information about an end user the concerns might be exacerbated.
2. The respondents most concerned about profiling might not understand the potential benefits and the prospects for protection of their privacy / confidentiality. As explained to the representatives at the initial Advisory Committee meeting to the participants, profiling is the process of understanding enough about the end user to customize the session and the output for the users' needs and characteristics. The Delphi questionnaire talked about "anonymous user profiling," "session profiling," and "real-time profiling." Each of these is a difficult concept in the abstract and it is possible the subsequent invitees to the Delphi did not have the

benefit of the extensive discussions regarding these issues at the initial in-person meeting. This absence could account for the differences in the importance ratings found between the two groups.

Because of the importance of some form of "profiling" to the intended customization processes of **Prevention Effects**, a in-depth re-examination of this issue is essential to ensure that the two elements of the issue are addressed: First there must be a clear and compelling purpose for profiling, and the end users should be able to understand its importance. Second, irrespective of the potential value of profiling, any schema adopted to provide this function to the system must be able to protect the end user from inappropriate use of the information. This is an issue that should be re-examined with the Advisory Group and vendor as CDC moves forward with its plans.

## References

1. For more information on the PRC Program see: <http://www.cdc.gov/prc>
2. Institute of Medicine. Linking research and public health practice: a review of CDC's program of centers for research and demonstration of health promotion and disease prevention. National Academy Press: Washington, D.C. 1997. (p. 55)