APPENDIX A

CONCEPT SYSTEMS, INC.

CANADIAN-U.S. CANCER CONTROL ALLIANCE

CONCEPT MAPPING SUMMARY REPORT

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PREPARED FOR:

NATIONAL CANCER INSTITUTE AND NATIONAL CANCER INSTITUTE OF CANADA

BY:

CONCEPT SYSTEMS, INCORPORATED

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EXECUTIVE SUMMARY

The U.S. National Cancer Institute and the National Cancer Institute of Canada collaborated, under the auspices of the Canadian-U.S. Cancer Control Alliance, to identify strategic issues of critical importance to the integration of research and practice and to determine how best to address them. The project was designed to focus on specific actions a range of stakeholders could take to more effectively integrate research with practice.

For this project, staff from the above organizations collaborated with Concept Systems, Inc., (CSI) to work with three stakeholder groups from both Canada and the United States, using a concept mapping methodology to analyze and map participants' ideas and values and then using that data to facilitate discussions and action planning at a series of three stakeholder meetings held in the summer of 2005. This methodology provided a quantitative basis for discussion and planning within a group setting.

This report is a summary of what the project participants identified as actions they could take to more effectively integrate research and practice in cancer control and of their perceptions of the relative importance and feasibility of specific actions and broad, strategic issues. The participants included researchers and practitioners from primary care, oncology specialties, and public health settings. The contributions of the stakeholder participants in the project led to the wealth of information presented here.

This project enabled us to capture the specific recommendations of all the individual participants, while also allowing us to identify themes and commonalities among all participants. The stakeholders' contributions have provided a foundation for individual, organizational, and systems level efforts, as well as contributing to strategic initiatives in both countries and future collaborative efforts of the Canadian-U.S. Cancer Control Alliance.

PROJECT DESIGN AND METHODOLOGY

Across North America, strategic cancer research funding now focuses on relevance, impact, and application as well as excellence in science and the discovery process. Both the National Cancer Institute and the National Cancer Institute of Canada, now collaborating as the Canadian-U.S. Cancer Control Alliance, face the challenge of finding the best mechanisms to strengthen relationships among cancer control researchers and users of health knowledge, enhance capacity for knowledge uptake, and accelerate the flow of knowledge into beneficial health applications.

Both organizations have had significant efforts under way within the past few years to address these issues. The NCIC has prepared a draft concept paper, "The Language and Logic of Research Transfer: Finding Common Ground" (vetted and revised several times since June 2004), to begin to describe and define an integrated framework and language to guide NCIC strategic planning efforts around the challenges of research transfer. In the United States, NCI has begun a "Dialogue on Dissemination" to strategically identify steps that can be taken to improve the uptake of clinical and public health practices that are known to reduce the burden of cancer. The current initiative builds on and extends these separate but related efforts.

In support of this collaboration and to inform efforts in both countries, this study sought to involve key stakeholder groups in a collaborative endeavor to identify strategic issues of critical importance to the integration of research and practice and determine how best to address them. The specific goals of the project were to:

- Create a shared understanding of knowledge transfer in cancer control.
- Understand the multiple perspectives of stakeholders regarding the integration of cancer control science with cancer control practice.
- Develop sets of stakeholder priorities for the development of a common language.
- Identify the relative importance and comparative feasibility of strategic issues in research-practice integration in cancer control and specific actions that stakeholders might take to more effectively integrate research with practice.
- Assess the degree to which there is consensus among stakeholders regarding the relative importance and feasibility of strategic issues and specific actions.
- Enable both countries to develop action plans for aligning efforts with the strategic issues identified from consideration of stakeholder input.

To accomplish the desired results, planners used The Concept System® planning and facilitation methodology. Concept mapping is a mixed-methods planning and evaluation approach that integrates familiar qualitative group processes (e.g., brainstorming, categorizing ideas, and assigning value ratings) with multivariate statistical analyses to help a group describe its ideas on any topic of interest and to represent these ideas visually through a series of related maps. Data collection took place between March and June 2005 and was followed by a series of three stakeholder group meetings (primary care on July 11–12, 2005, in Seattle, WA; oncology specialties on August 22–23, 2005, in Calgary, AB; and public health on September 7–8, 2005, in Toronto, ON) to interpret the results and develop recommendations.

The concept mapping approach used had several key advantages for this study:

- It combined the ideas of diverse stakeholders in unique ways to understand how the entire group thinks about this issue. Stakeholders included researchers and practitioners in the United States and Canada who work in primary care settings, oncology specialty settings, or public health.
- It produced a clear visual representation of how the group as a whole thinks about the issue of integrating science with service.
- It assured a well-informed, group-oriented process.

The concept mapping process typically requires participants to brainstorm a set of statements relevant to the topic of interest, individually sort these statements into related piles, rate each statement on one or more dimensions, and generate a series of quantitative maps that reveal a topology of thought resulting from the analysis of this data. Participants can then use these maps as a basis for further discussion and as a framework for conclusions and action planning. The entire process is driven by the stakeholders themselves, ranging from initial brainstorming to the eventual identification and naming of clusters of thought to interpretation and analysis of these maps.

This report is a summary of what a Planning Group of NCI and NCIC staff (and associates),[1] and an extended group of stakeholders identified as specific issues relevant to integrating science with service in cancer control, with assistance from consultants from Concept Systems, Inc. (CSI). The contributions of the stakeholder participants in the project led to the wealth of information presented here. This project enabled us to capture the specific ideas of all the individual participants, while also allowing us to capture themes and commonalities among all participants.

The following steps were taken to achieve the goals of this study: establishing the focus, identifying the participants, idea generation, idea synthesis, structuring the ideas, computing the maps, and map interpretation.

Establishing the Focus

To facilitate the collection of meaningful input, members of the Planning Group, with guidance from Concept Systems, Inc., developed a focus prompt to which stakeholders responded:

"One thing that we are doing or could do in our setting that would more effectively integrate research with practice is..."

This focus prompt was developed to build on and extend previous, related work conducted by the National Institute of Canada. For example, the Designing for Dissemination project (2002) asked participants to brainstorm, "*One thing that should be done to accelerate the adoption of cancer control research discoveries by health service delivery programs is…"* That project, and others, identified many

[1] Planning Group members included: Jon Kerner, Cynthia Vinson, Amanda Graham, and Lenora Johnson from NCI; Allan Best, Heather Logan, Stuart Edmonds, Rejean Landry, and Erika Brown from NCIC; and Kathleen M. Quinlan, William Trochim, and Amy Hogan from CSI.

actions for the NCI to implement. In contrast, the current project sought to identify actions at a variety of levels (individual, organizational, and systems) and loci of responsibility. The current project also emphasized the bi-directionality of research-practice integration.

Identifying the Participants

Activities that required participation from communities of interest included brainstorming, organizing, and rating. A large group (the extended group, N=275) was identified from the most comprehensive available information on individuals with knowledge of and involvement in the area of research and practice in cancer control. This extended group included approximately equal representation of American participants and Canadian participants and included individuals with experience in primary care, oncology specialty, and public health settings. This large group was invited to brainstorm ideas individually and, as a subsequent activity, to rate the collected statements on relevant value scales. The core group consisted of the NCI and NCIC planning group for this project as well as other identified stakeholders (N=75). In addition to brainstorming and rating, the core group was asked to individually sort the collected statements and was invited to attend one of three stakeholder meetings in the summer of 2005.

Idea Generation

During the period from March 14–31, 2005, participants were asked individually to provide input on specific ideas relevant to integrating research with practice, using the above prompt as the focus for the structured responses. Recognizing that the stakeholders' locations and access to technology varied, the project enabled multiple methods for submitting ideas. Stakeholders were contacted and provided with a Web address for a project-specific Web site on which participants could submit their ideas online.[2] Additionally, participants could choose to submit ideas using a fax back form. Participants could also return forms by mail. Approximately 101 people participated,[3] contributing a total of 293 ideas.

Idea Synthesis

The preliminary statement set generated by stakeholders in response to this focus prompt numbered 293. At a meeting on April 6, 2005, staff from the NCI and the NCIC produced a final set of 87 statements by using the following criteria:

- Relevance to the stated focus question or within the scope of the question at hand;
- Redundancy or duplication;
- Clarity of meaning;
- Relative appropriateness for the sorting and rating tasks to be completed.

Appendix I shows the final list of 87 ideas that resulted from this process.

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[2] The Concept System® computer software v.3 (© Concept Systems, 2004) was used to perform all analyses and produce all of the maps and statistical results. Data were also collected over the World Wide Web using the Concept System Global© software to allow for participation from any location with access to the World Wide Web. Detailed references and articles on the Concept System can be obtained by calling 607-272-1206 or by emailing infodesk@conceptsystems.com.

[3] Participation in Idea Generation is anonymous. Estimates of participation were developed based on the number of unique visitors to the Web site and the number of faxes received.

Structuring the Ideas

Following the completion of the idea generation, or brainstorming, phase, participants were contacted again and asked to participate in tasks to structure the information.

Sorting. In the sorting task, individuals were asked to sort the entire database of ideas into groups or themes based on similarity of ideas. Members of the core group were asked to complete this task, as well as the subsequent rating task below, between April 14, 2005, and June 2, 2005. Concept Systems, Inc., provided consulting assistance and facilitation to this process and again provided a dedicated Web site for those participants to complete the task online.

Rating. For the rating task, stakeholders who participated in the idea generation were again contacted and asked to rate each of the final ideas on a Likert five-point scale. Both the core group and the larger extended group participated in this process, which was completed by June 2, 2005. Participants were asked to rate along two dimensions: *Importance* and *Feasibility*. The exact wording of the ratings scales were as follows:

> *Importance:*
>
> Please rate each item according to how important you think the item is to the goal of integrating research and practice in your setting, compared to the rest of the items. Use the following scale: 1=relatively unimportant; 2=somewhat important; 3=moderately important; 4=very important; 5=extremely important.
>
> *Feasibility:*
>
> Please rate each item according to how feasible you think the item is to the goal of integrating research and practice in your setting, compared to the rest of the items. Use the following scale: 1=not at all feasible; 2=somewhat feasible; 3=moderately feasible; 4=very feasible; 5=extremely feasible.

Stakeholders completed this task by using the dedicated Web site, or by faxing back a paper form that was sent to them.

At this phase, participants also completed a short questionnaire that described the organization or setting they represented in this exercise. These organizational characteristics were tied to the rating results, enabling comparisons in values and perspectives across different stakeholder groups.

Computing the Maps

The Concept System [4] uses computer technology to conduct multidimensional scaling and hierarchical cluster analysis to integrate the sorting information from each individual and to develop a series of easily readable concept maps and reports. These maps show the perspective of the entire group of participants as

[4] The Concept System® and Concept System Global© software are licensed through Concept Systems, Incorporated, Ithaca, New York (http://www.conceptsystems.com).

well as subgroups. In effect, The Concept System represents the unique perspectives of a diverse group of individuals, preserves the best thinking of each individual, and integrates the individual detail to construct and produce a coherent picture of the entire group.

The Concept System used the sorted information from all core group participants to construct an 87x87 binary matrix of similarities.

The total similarity matrix was analyzed using non-metric multidimensional scaling (MDS) analysis with a two-dimensional solution. The two-dimensional solution yielded a configuration in which statements grouped together most often were located more closely in two-dimensional space than those grouped together less frequently. The x, y configuration resulting from the MDS analysis was the input for hierarchical cluster analysis. To determine the best fitting cluster solution, CSI consultants examined a range of possible cluster solutions suggested by the analysis, and took into account the fit of the contents within clusters as well as the specific desired uses of the results in planning and action development.

Map Interpretation

The maps and reports produced by The Concept System reflect and summarize the work of the stakeholders during the idea generation and structuring (sorting and rating) phases. The next step in the process required interpretation and discussion by the stakeholders in this project. Two tasks were undertaken in this step.

First, the resulting data was reviewed with the Planning Group to ensure the reasonableness of the solution and to name the clusters or concepts. This review also involved a preliminary discussion of the meaning, relevance, and potential uses and implications of the results.

Second, the results were presented to three stakeholder groups at action planning meetings held in the summer of 2005. One stakeholder meeting was held for each of the audience groups (primary care on July 11–12, 2005, in Seattle, WA; oncology specialties on August 22–23, 2005, in Calgary, AB; and public health on September 7–8, 2005, in Toronto, ON), and each meeting had no more than 30 participants. The meetings were designed to gain a deeper understanding of the issues from specific stakeholder perspectives, to enable researchers and practitioners from each country to learn from each other, and to spend time in country-specific planning discussions. The goals of the meetings were to:

- Gather input from participants on what is needed to bridge the research/practice gap in order to inform NCI/NCIC action, based on a consideration and review of concept mapping results and written background materials.
- Identify individual, organizational, and system level action that participants can implement within their own organizations and advocate for in terms of system-level change to more effectively integrate research with practice.
- Identify action that the National Cancer Institute, the National Cancer Institute of Canada, and other research granting agencies can take to enhance the integration of research with practice.
- Create a community of practice that will work together (with NCI/NCIC) beyond the meeting to implement actions that require partnership efforts.
- Identify opportunities for fruitful, strategic collaboration between the United States and Canada.

RESULTS

Concept mapping combines a group process with computer technology that uses multivariate statistical techniques to develop maps to show what the group thinks. A single concept mapping project actually produces a number of interrelated maps—similar to photographing different views of the same structure. In this case, the group was a purposive sample of stakeholders who were asked to provide structured input on integrating research with practice. Overall, the core group response rate was slightly higher than an average concept mapping project, with a participation rate of 48 percent (36/75). For the extended group, 95 out of a total of 275 participated, for a response rate of 35 percent. Response rates for the ratings task of concept mapping projects tend to range from 25 percent to as high as 70 percent. The approach to the ratings task, while resembling a survey in some ways, is better likened to qualitative, applied research, such as focus group methodologies for strategic planning purposes. In such qualitative, applied projects, the goal is not to generalize findings, but to enable the right individuals, with their diverse knowledge and perspectives, to contribute meaningfully to decision-making. Concept mapping provides a systematic, iterative process for stakeholder participation and also provides tools to organize participants' input in ways that make it readily usable.

Concept Mapping Results

Concept maps were generated to show the relationships and importance ratings for the 87 distinct ideas generated during the brainstorming process.

The point map in Figure 1 shows each of the original brainstormed ideas as a point on the screen. Ideas that are closer together were sorted more frequently by participants into the same group. This map shows 87 points, each representing one of the distinct ideas brainstormed by the stakeholders.

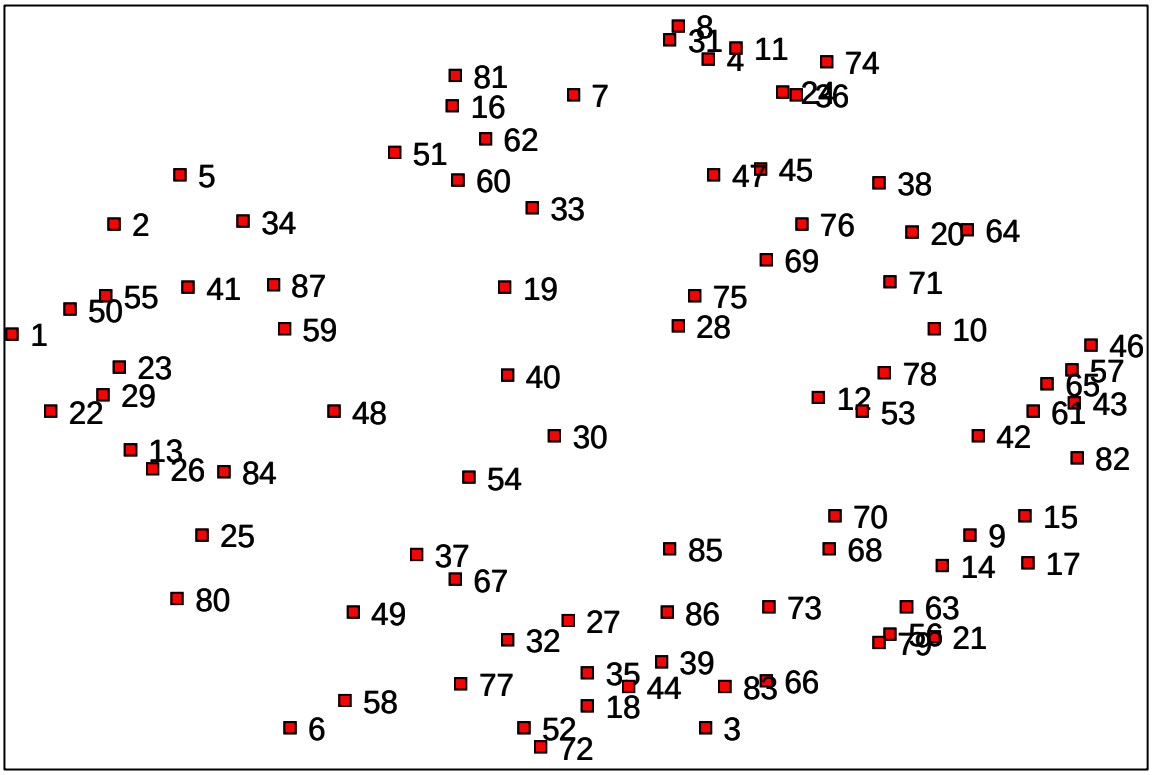


Figure 1. Point map, indicating the array of all statements and their relationship to one other.

A cluster point map shows all the points, just as the point map does. But it also shows the clusters into which the points can be grouped. The name given to each cluster will reflect the theme or topic expressed in the statements within that cluster. In this case the optimal solution was a ten-cluster solution, as indicated in Figure 2 below.

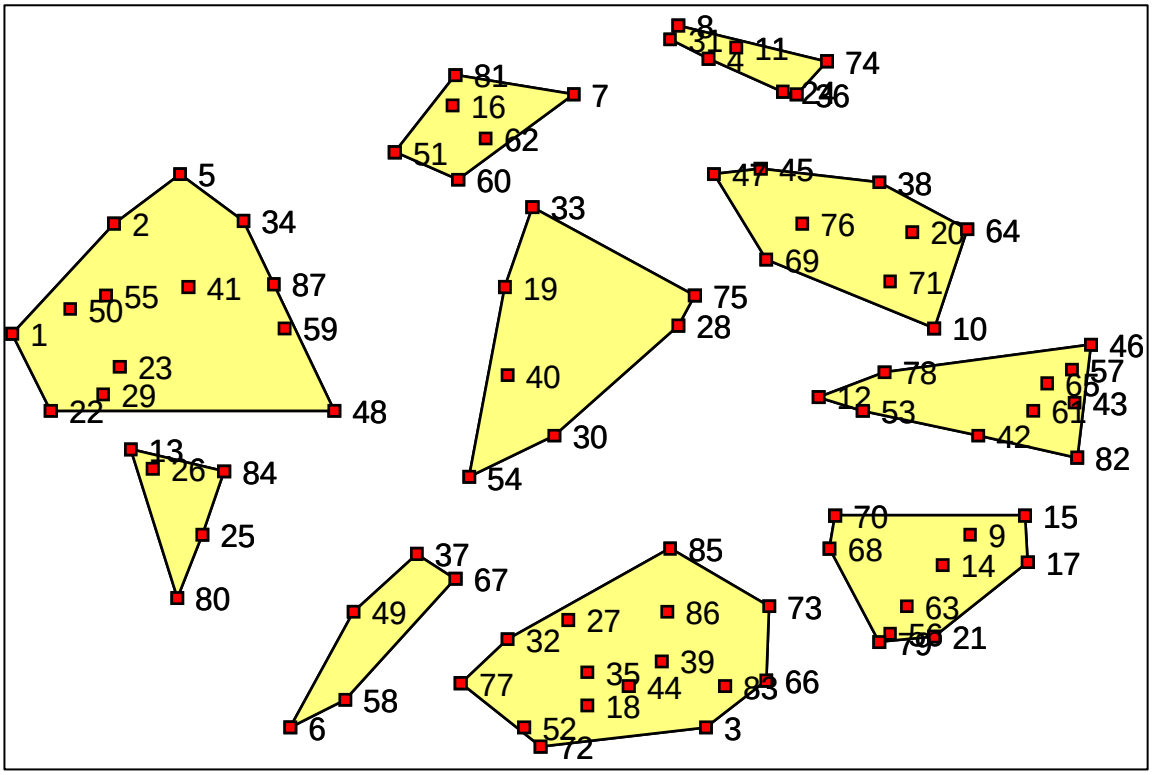


Figure 2. Point cluster map, showing point values groups within statement clusters.

The data suggest that ten major issues should be considered essential to more effectively integrating research with practice. The labeled ten-cluster concept map in Figure 3 shows the clusters labeled with these categorical issues. The following are those categories, in no particular order:

- Promote Evidence-Based Practice
- Implement Innovative Professional Training
- Share Findings in the Context of Practice
- Provide Incentives to Apply Research Findings
- Fund and Facilitate Integration Activities
- Develop Participatory/Action Research Strategies
- Respond to Stakeholder Priorities
- Ensure Quality and Accountability
- Enhance Data Systems and Capacity
- Change Organizational Culture and Structure

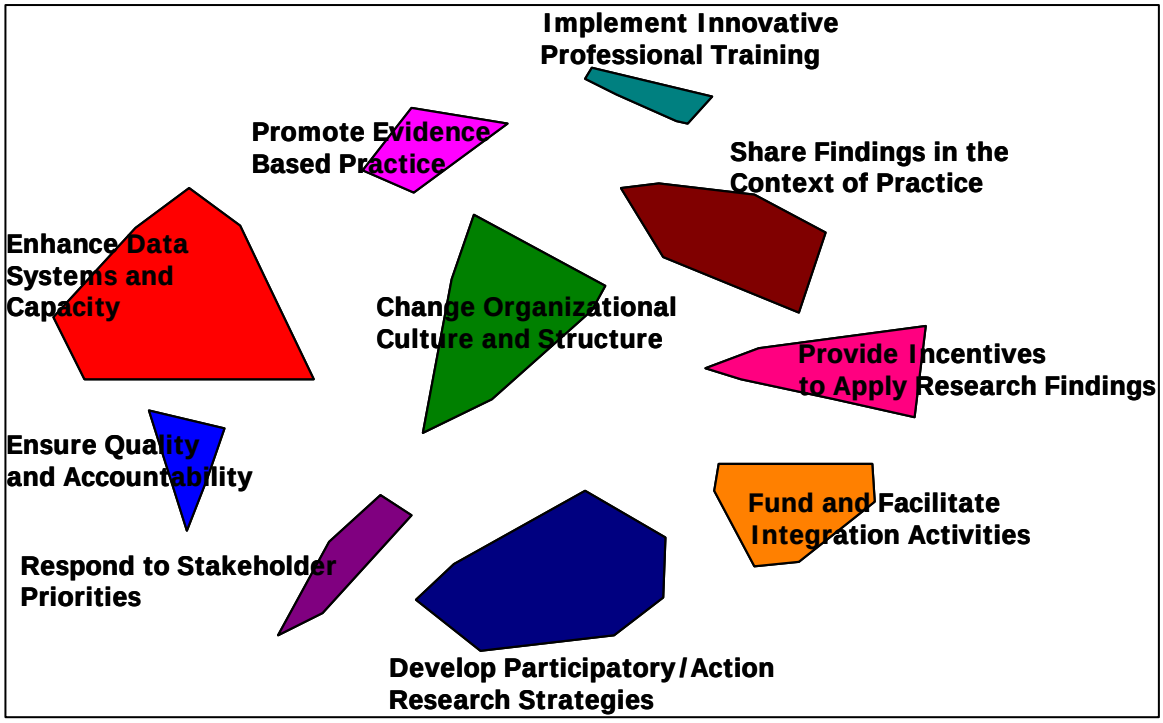


Figure 3. Concept map. A ten-cluster concept map indicating the main topics, or concepts, that contain the 87 ideas that make up the content of the study results.

The concept map is a useful tool for reviewing how each of the 87 ideas parse out into meaningful categories from the stakeholders' point of view. (See Appendix I for a list of the statements, organized by clusters.) However, in order for the above figure to be most meaningful when shared with the stakeholders, CSI, together with the Planning Group, developed the models shown below in Figures 4–5. In addition to providing a clear picture of the key topic areas, these models show which clusters meaningfully group together to form regions and provide a starting point for action. The regions in Figure 4 can be further abstracted to form a model of research-practice integration, shown in Figure 5.

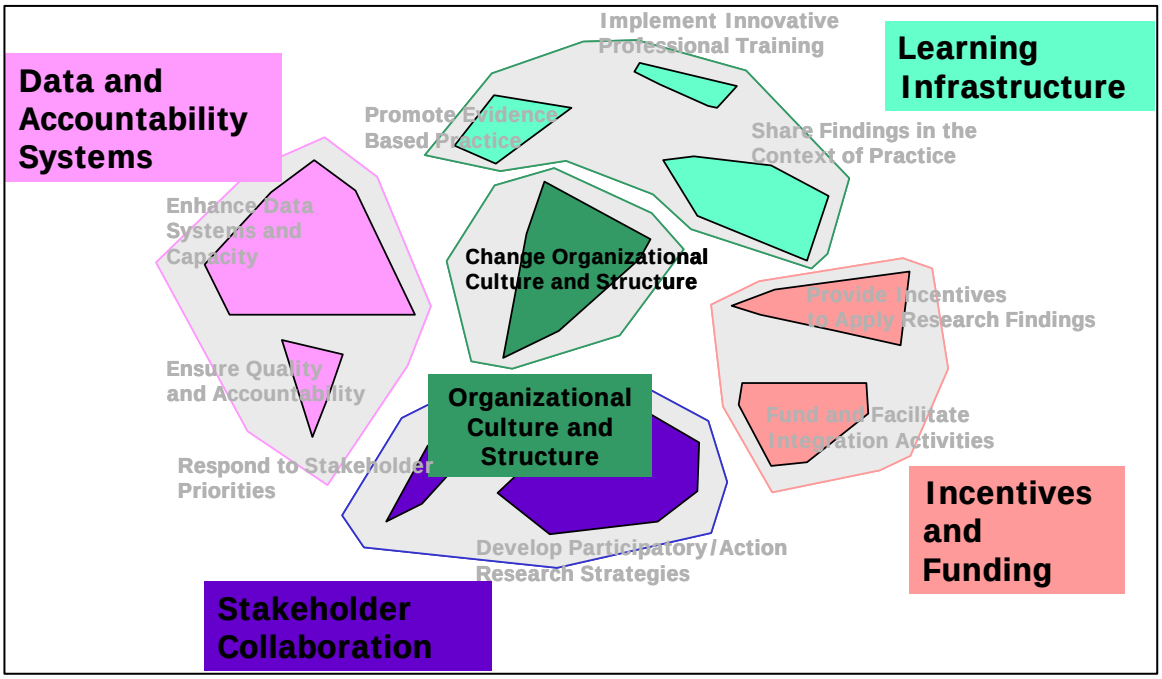


Figure 4. The concept map further grouped into regions: a macro view.

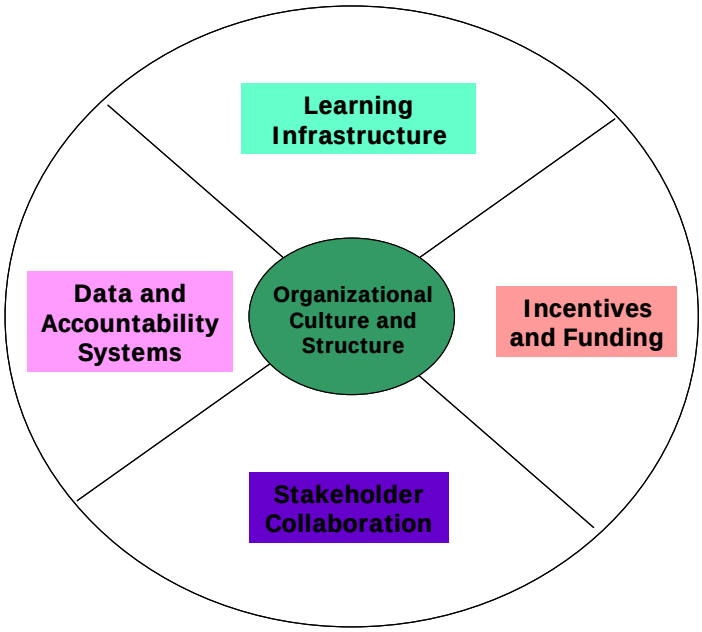


Figure 5. A model of research-practice integration.

Pattern Matching Results

To compare the importance and feasibility ratings provided by all project participants, we created a Pattern Match, shown below in Figure 6. A Pattern Match is a tool to compare the *relative* ratings by cluster. It describes the average ratings of each cluster, using the labels from the final map to represent the content of each cluster. The Pattern Match below shows the relationship between the average importance and feasibility ratings for each cluster. In this case, the relationship of the importance value to the feasibility value at the cluster level is unpredictable; the correlation of .05 indicates a lack of relationship. Higher importance clusters are noted at the top of the left hand scale; they include Change Organizational Culture and Structure, Enhance Data Systems and Capacity, and Fund and Facilitate Integration Activities. The least important clusters are Implement Innovative Professional Training and Promote Evidence Based Practice. Note that placement at the bottom of the graph does not mean it is not at all important, but rather that it is *less* important, relative to the other clusters. Because key informants generated all of the ideas, all ideas can be thought of as having some level of importance.

On the right hand side of the graph, in contrast, Share Findings in the Context of Practice was considered the most feasible, followed by Promote Evidence Based Practice. The slope of the lines from left to right indicate, at the cluster level, the "disconnects" that may exist in the relationship between stakeholders' views of importance and the degree to which it is feasible to make progress on such issues.

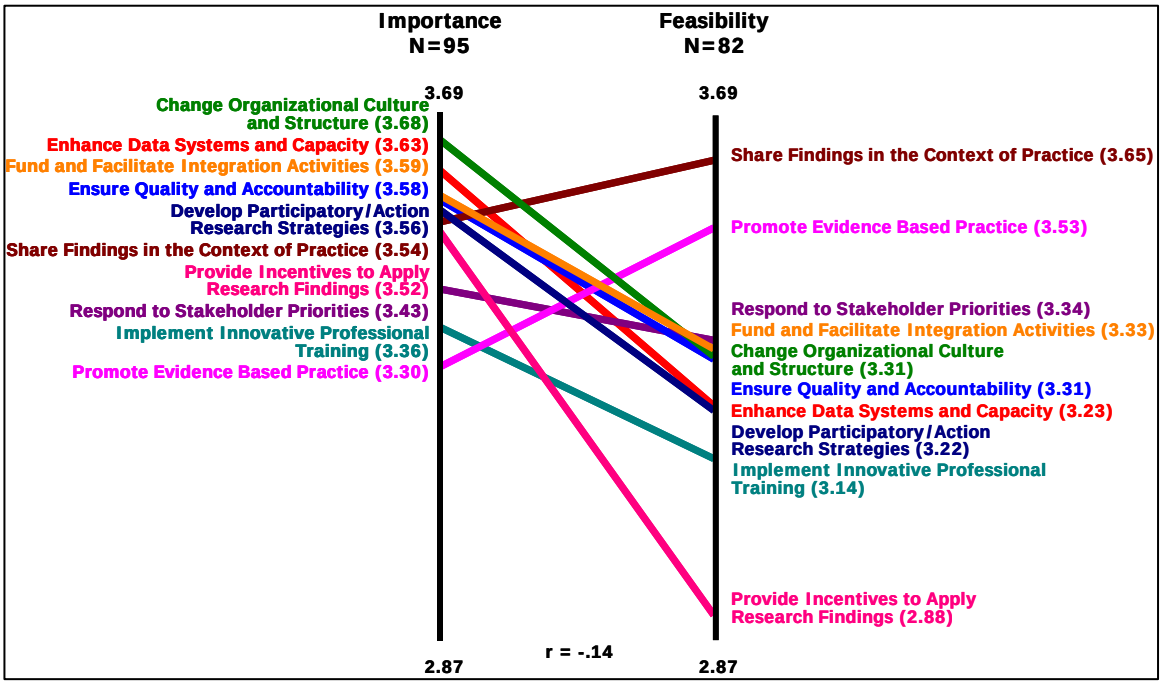


Figure 6. Absolute Pattern Match of importance and feasibility.

Pattern Matches are also a useful tool for comparing the values of different subgroups. Figure 7 shows differences in importance ratings between the three stakeholder groups. This analysis confirmed the Planning Group's hypothesis that "context matters." In other words, different stakeholder groups face different issues and think differently about the challenge of integrating research and practice based on the settings in which they work.

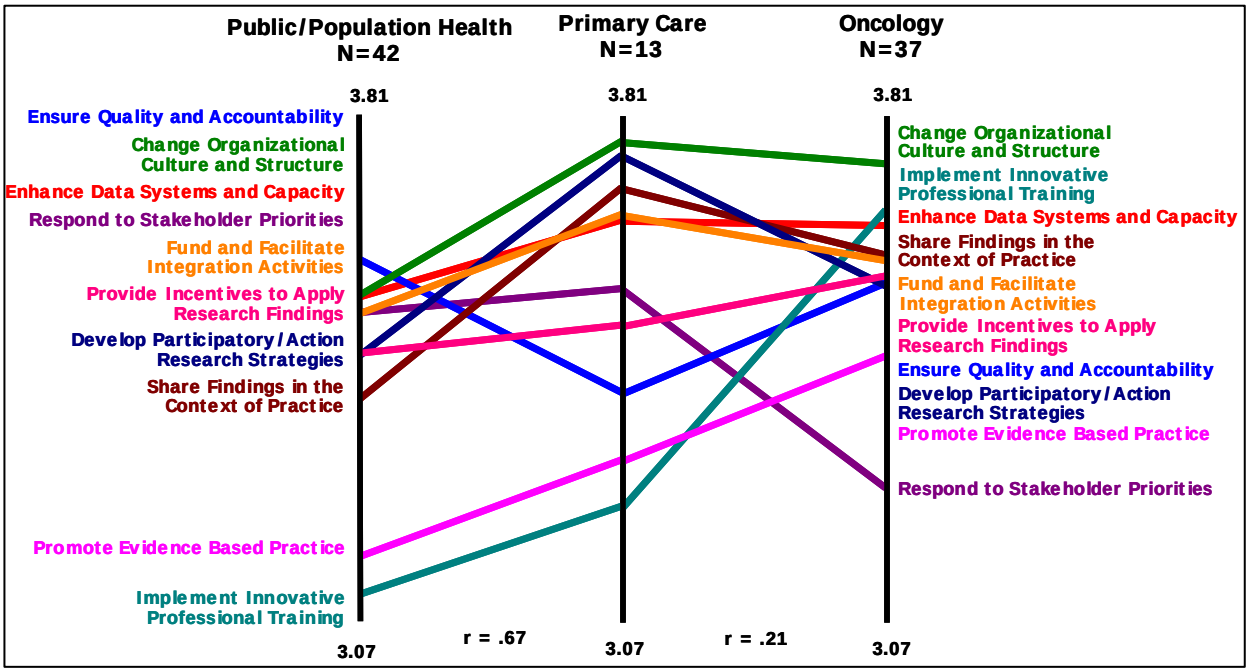


Figure 7. Pattern Match of importance ratings by setting.

Go-Zone Analysis Results

The Concept System analysis also created Go-Zone output for each cluster and for each region in the model; Figure 8 illustrates an example of a Go-Zone. Go-Zones for each region are located in Appendix II. These analyses are bivariate plots for each cluster that show the average importance and feasibility rating of each statement within a cluster. Just as the concept map clusters, Pattern Matches, and conceptual framework models enable decision makers to observe, understand, and agree upon the relationship and relative value of concepts, the Go-Zone analyses enable stakeholders to keep the larger conceptual view in mind, while returning to the detailed contents of each cluster to help articulate the priorities within a given cluster of issues. This enables the stakeholders to continue to have access to the broad conceptual framework that the cluster map provides, including the array of all 87 items, while being able to target a few priority issues at a time.

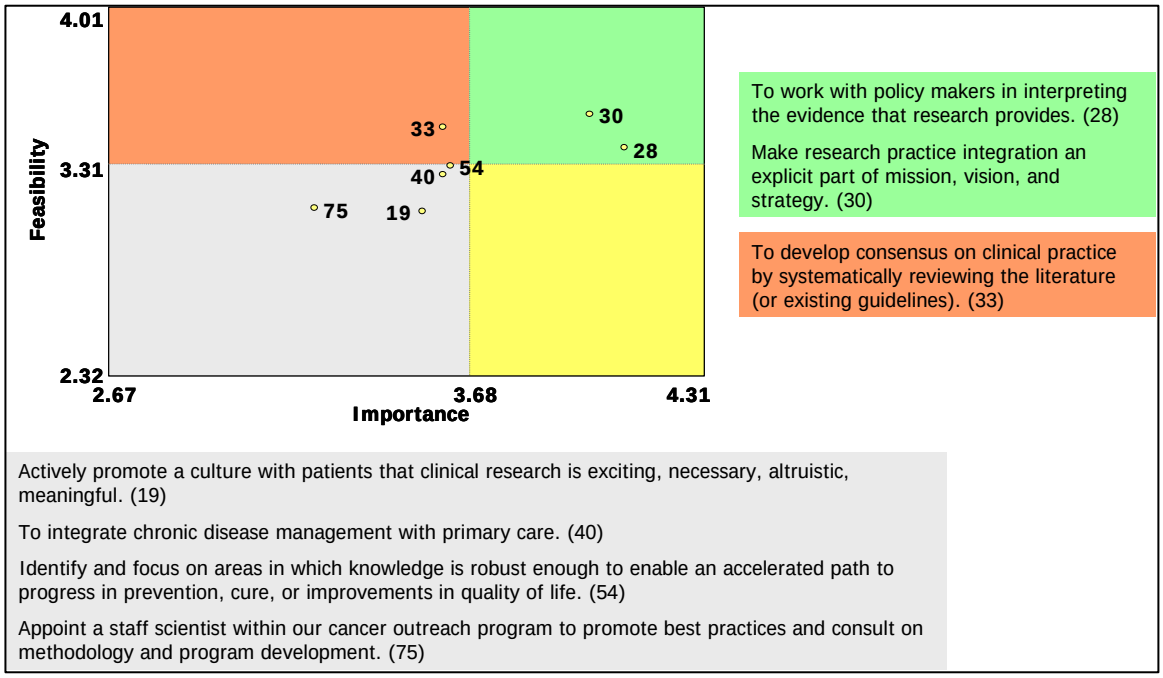


Figure 8. Sample Go-Zone analysis.

Those items located in the upper right quadrant were rated higher than average on both importance and feasibility within this cluster. (Note: The quadrants are defined by the means for this cluster.) We call this the "Go-Zone" because when ideas are rated high on both importance and feasibility, they are often the most logical ideas to act upon. However, this is not always the case. Sometimes ideas that are rated high on both importance and feasibility are indeed important ideas but are already being addressed sufficiently. Similarly, the items in the upper left (high feasibility and relatively low importance) and those in the lower right (high importance and relatively low feasibility) can be considered "gap" areas. These gap areas contain items for which value imbalance exists. However, sometimes ideas that are rated high in importance and low in feasibility have not yet been adequately tried or explored and are worthy of attention and effort. In these cases, the feasibility may be unknown or underestimated. Certainly there are other interpretations that could be added to understand this graph. The key point is that this provides a way for all stakeholders to view the data and to then engage in assisted dialogue about implications.

CONCLUSION AND RECOMMENDATIONS

At the series of stakeholder meetings, participants reviewed the concept map results and prioritized action statements. Participants identified ways that the actions could be implemented at three main levels in their own country:

- **NCI/NCIC support:** What resources or support are needed from NCI/NCIC to achieve each priority action item?
- **Professional Association Support:** Which other organizations, leaders, or types of individuals need to be involved or to implement your priority actions or to influence policies that will enable these actions?
- **Your Role:** What will you and/or your institution(s) do to achieve each of the priority action items you have selected? What specific steps can **you** commit to over the next year in order to implement each action item?

Discussions also focused on areas where Canada and the Unites States can most fruitfully collaborate.

The Scientific Consulting Group was responsible for preparing meeting reports of each of the three meetings. The reader should consult those reports for recommendations regarding next steps.

APPENDIX

Appendix I: Statement List

The following is a list of statements used in the concept mapping project, in response to the focus prompt *"One thing that we are doing or could do in our setting that would more effectively integrate research with practice is..."* The statements are organized by cluster.

Cluster: Promote Evidence-Based Practice

7 Provide feedback to practitioners and hospitals not presently adopting evidence-based changes in practice that should be adopted.
16 Provide better educational materials for patients going into clinical research.
51 Develop and regularly update official Web sites that provide information for patients.
60 Continue to provide advocacy groups and their networks with updates on research as it is ready to be employed in practice.
62 Major, ongoing public awareness campaign on clinical research.
81 To provide "just in time"/point of practice education for physicians such as consultation phone lines or PDAs for various topics (i.e. palliative care).

Cluster: Implement Innovative Professional Training

4 To increase the prevalence and effectiveness of mentoring clinicians in the use of evidence-based decision making.
8 Increase the number of training programs that make knowledge transfer a core competency.
11 CME courses that are case-based, showing how to implement research, not just results of research.
24 To integrate knowledge sharing into joint training programs for researchers and practitioners.
31 To incorporate the development of translation and dissemination skills as core competencies taught in all professional training programs.
36 To require clinical research training in the oncology specialties (mandatory research year or two) and offer New Investigator awards.
74 To develop honors level undergraduate programs that directly link undergraduate students with clinical research settings.

Cluster: Share Findings in the Context of Practice

10 Provide a brief Implications for Practice and Policy section for each publication or presentation to facilitate discussion about relevance and adoption.
20 To organize meetings with research participants to disseminate research findings.
38 To hold annual transdisciplinary workshops for new investigators (e.g., oncologists, epidemiologists, behavioral scientists) on how to integrate cancer control research with practice.

45 Establish research rounds in major clinical institutions that are multidisciplinary to facilitate uptake of results.
47 Develop awareness of the contributions of science and practice to knowledge and "better practice."
64 Create an expectation that research and practice go together and must be part of how we do our work.
69 Disseminate research team findings, ongoing projects, or proposed projects (possibly e-mail based) in short, easy to read overviews.
71 Provide executive summarization of research findings, along with study reprints, to key policy makers and their health care liaisons.
76 Ensure that research findings in the peer-review literature get "translated" for practitioners into something usable.

Cluster: Provide Incentives to Apply Research Findings

12 Work with payers to provide incentives for the early adoption of evidence-based research results.
42 Establish reimbursement mechanisms for evidence-based prevention/education services.
43 Make translation activities a part of everyone's annual performance review.
46 Embrace tenure track models that promote a better integration of practice with research.
53 Require cancer centers to focus at least some portion of their resources on dissemination of evidence-based prevention practices.
57 Reward practitioners who incorporate science into their practice.
61 Provide incentives for organizations to utilize evidence-based research.
65 Implement pay-for-performance reimbursement based on measures derived from evidence-based guidelines.
78 To periodically review research output in specific areas of interest and develop a plan for their adoption as part of the organizational activities.
82 To provide recognition for time and effort required to develop research practice partnerships.

Cluster: Fund and Facilitate Integration Activities

9 Have all grant applications for national research funding competitions be required to include an evaluation component of their dissemination plan.
14 Require all grantees to consider downstream applications of their research, preferably in collaboration with potential practice partners.
15 Provide more funding for the implementation of programs/interventions that are science-based.
17 To reward the interactions (e.g. publications, presentations) among basic/translational researchers and those conducting clinical trials.
21 To fund collaborative partnerships between applied researchers and practitioners to improve chronic disease prevention and management.
56 To fund more cost-benefit and cost-effectiveness research.
63 Support and fund increased transdisciplinary research involving transdisciplinary knowledge transfer research questions.

68 To provide researchers and practitioners an opportunity to spend time in each other's settings.
70 Encourage forums that bring practitioners and researchers together in the same room, so that perspectives can be shared.
79 To reward partnerships between academic researchers and community stakeholders in the grants, right up front.

Cluster: Develop Participatory/Action Research Strategies

3 To encourage researchers and practitioners to build participatory research projects together (from developing objectives to writing the publication).
18 Increase the amount of participatory research using qualitative and quantitative methods.
27 To develop, support, and participate in practice-based research networks.
32 Focus research on interventions whose delivery is affordable in the real world.
35 Develop and use research designs that can provide faster answers to practice questions.
39 Increase the generalizability of trial findings by reducing nonessential exclusion criteria.
44 To develop clinical research protocols with input from larger stakeholder teams that include end users including patients/families, clinicians, and policy makers.
52 Demonstrating that we are willing to share the research resources and the power by involving researchers representative of the community and other community members in decision making and in compensated positions on the research team.
66 To include practitioners on research committees at all phases from the formulation of questions to the interpretation and application of results.
72 Ensuring that the research process is respective of cultural beliefs and practices of the target community.
73 Mandatory registration of trials to facilitate collaborations, minimize duplication, and ensure that negative results are published to learn from past "failures."
77 To fund collaborative partnerships between public health and primary care stakeholders to improve chronic disease prevention and management in primary care settings.
83 Improve the balance between efficacy trials and effectiveness trials.
85 To encourage research on diffusion of innovations in health systems.
86 To develop closer ties between cancer control researchers and cancer outreach staff.

Cluster: Respond to Stakeholder Priorities

6 Assessing what communities and minority groups want researched by conducting community discussion groups that set research priorities.
37 Developing a dissemination program that aims to reduce health disparities within the community.
49 Conduct additional research into effective methods of dissemination.
58 Evaluate the process of community-based participatory research.
67 To provide opportunities for researchers to meet with donors and practitioners to demonstrate the return on investment of the research.

Cluster: Ensure Quality and Accountability

13 To develop and collect quality assurance measures on cancer control interventions.
25 Identify organizations that are responsible for dissemination.
26 Build in evaluation procedures for both public health agencies and health care systems dealing with cancer control.
80 To partner with organizations interested in funding the production and dissemination of evidence-based products and programs for patients.
84 To develop and collect implementation measures, including noting how programs evolve over time, and cost measures as part of all projects.

Cluster: Enhance Data Systems and Capacity

1 To partner with technology companies to implement evidence-based decision support tools in practice.
2 Seek and identify models of success: Are there practitioners effectively implementing evidence-based interventions? Why and how are they doing it?
5 Understand the capacity of practitioners to use an evidence base.
22 Provide better support for registries and other data collection programs to monitor outcomes.
23 Collect standard outcome measures that are important to decision makers, clinicians, and policy makers.
29 Develop common definitions for interventions and billing codes so that the diffusion of research could be tracked using administrative data sets.
34 To implement software to allow primary and specialty physicians to integrate evidence-based care.
41 Understand the capacity of practice systems to use an evidence base.
48 Build capacity in hospitals to accommodate the initial increase in time, cost, and effort required to implement new strategies and therapies.
50 Install an information system capable of tracking progress on screening tests and providing aggregate data regarding the status of follow-up on abnormal tests.
55 Install an information system capable of measuring screening occurrence and generating correspondence with those due based on systematic review guidelines.
59 Have an easy to use, online database where clinicians could submit practical questions that could be used for new research.
87 Utilize information that is readily available through cancer registries to inform health practice.

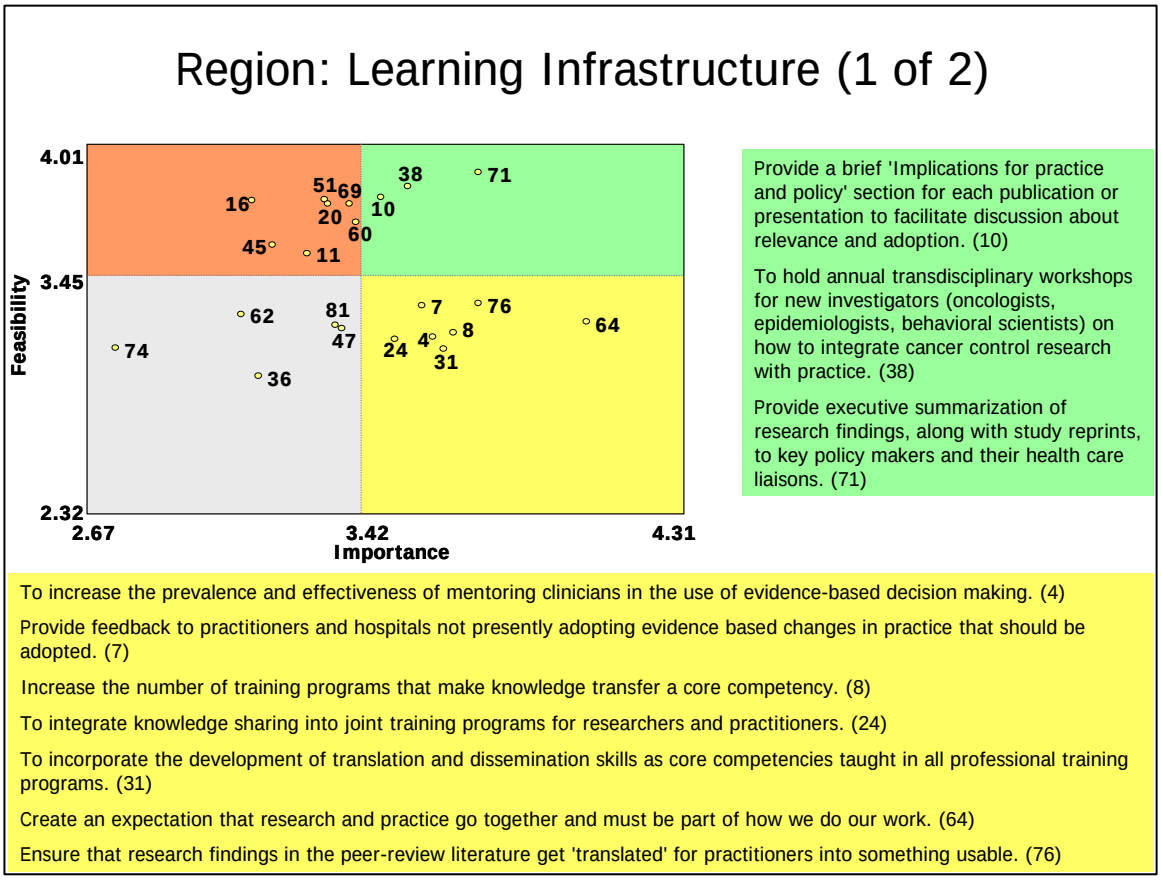
Cluster: Change Organizational Culture and Structure

19 Actively promote a culture with patients that clinical research is exciting, necessary, altruistic, meaningful.
28 To work with policy makers in interpreting the evidence that research provides.
30 Make research-practice integration an explicit part of mission, vision, and strategy.

33 To develop consensus on clinical practice by systematically reviewing the literature (or existing guidelines).
40 To integrate chronic disease management with primary care.
54 Identify and focus on areas in which knowledge is robust enough to enable an accelerated path to progress in prevention, cure, or improvements in quality of life.
75 Appoint a staff scientist within our cancer outreach program to promote best practices and consult on methodology and program development.

Appendix II: Region Go-Zone Analyses

Region 1. Learning Infrastructure



Provide a brief 'Implications for practice and policy' section for each publication or presentation to facilitate discussion about relevance and adoption. (10)

To hold annual transdisciplinary workshops for new investigators (oncologists, epidemiologists, behavioral scientists) on how to integrate cancer control research with practice. (38)

Provide executive summarization of research findings, along with study reprints, to key policy makers and their health care liaisons. (71)

To increase the prevalence and effectiveness of mentoring clinicians in the use of evidence-based decision making. (4)

Provide feedback to practitioners and hospitals not presently adopting evidence based changes in practice that should be adopted. (7)

Increase the number of training programs that make knowledge transfer a core competency. (8)

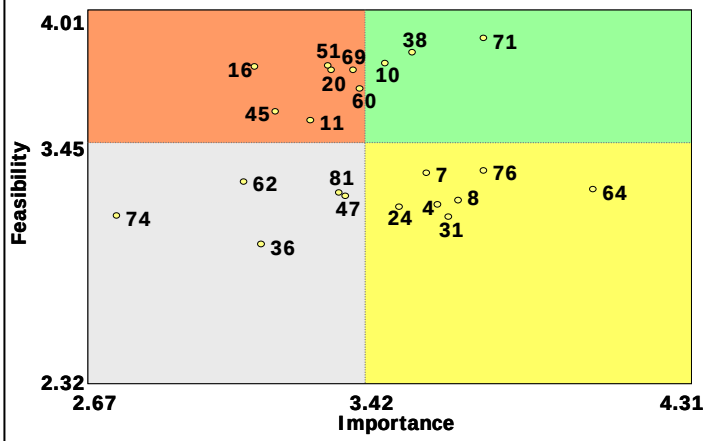
To integrate knowledge sharing into joint training programs for researchers and practitioners. (24)

To incorporate the development of translation and dissemination skills as core competencies taught in all professional training programs. (31)

Create an expectation that research and practice go together and must be part of how we do our work. (64)

Ensure that research findings in the peer-review literature get 'translated' for practitioners into something usable. (76)

Region: Learning Infrastructure (2 of 2)



To require clinical research training in the oncology specialties (mandatory research year or 2) and offer New Investigator awards. (36)

Develop awareness of the contributions of science and practice to knowledge and "better practice". (47)

Major, ongoing public awareness campaign on clinical research. (62)

To develop Honors Level Undergraduate Programs that directly link undergraduate students with clinical research settings. (74)

To provide "just in time"/point of practice education for physicians such as consultation phone lines or PDAs for various topics (e.g. palliative care). (81)

CME courses that are case-based, showing how to implement research, not just results of research. (11)

Provide better educational materials for patients going into clinical research. (16)

To organize meetings with research participants to disseminate research findings. (20)

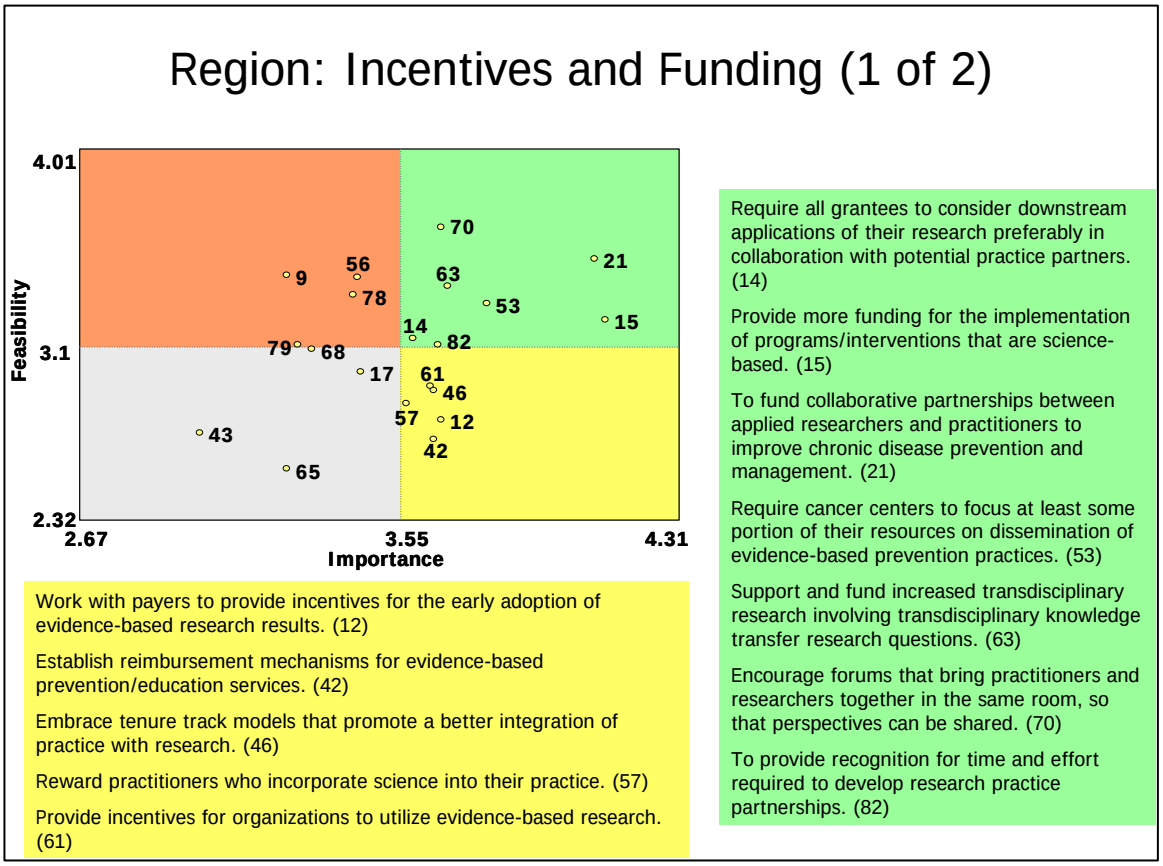
Establish research rounds in major clinical institutions that are multi-disciplinary to facilitate uptake of results. (45)

Develop and regularly update official websites that provide information for patients. (51)

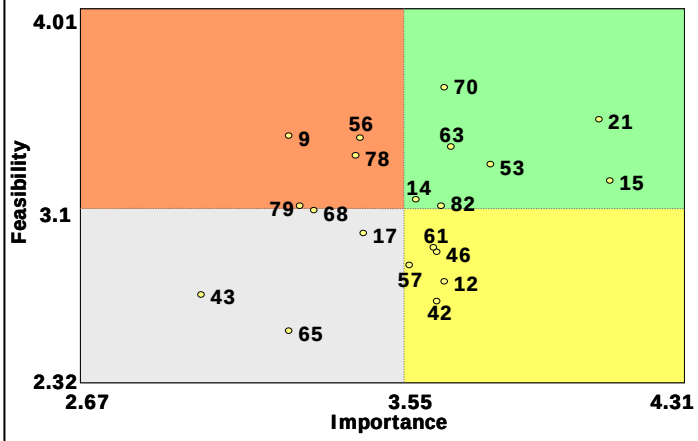
Continue to provide advocacy groups and their networks with updates on research as it is ready to be employed in practice. (60)

Disseminate research team findings, ongoing projects, or proposed projects (possibly email based) in short, easy to read overviews. (69)

Region 2. Incentives and Funding



Region: Incentives and Funding (2 of 2)



Have all grant applications for national research funding competitions be required to include an evaluation component of their dissemination plan. (9)

To fund more cost-benefit and cost-effectiveness research. (56)

To periodically review research output in specific areas of interest and develop a plan for their adoption as part of the organizational activities. (78)

To reward partnerships between academic researchers and community stakeholders in the grants, right up front. (79)

To reward the interactions (e.g. publications, presentations) among basic / translational researchers and those conducting clinical trials. (17)

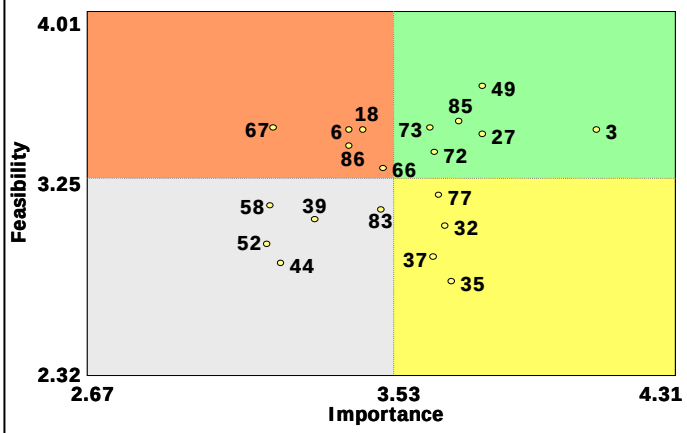
Make translation activities a part of everyone's annual performance review. (43)

Implement pay-for performance reimbursement based on measures derived from evidence-based guidelines. (65)

To provide researchers and practitioners an opportunity to spend time in each other's settings. (68)

Region 3. Stakeholder Collaboration

Region: Stakeholder Collaboration (1 of 2)



To encourage researchers and practitioners to build participatory research projects together (from developing objectives to writing the publication). (3)

To develop, support, and participate in practice-based research networks. (27)

Conduct additional research into effective methods of dissemination. (49)

Ensuring that the research process is respective of cultural beliefs and practices of the target community. (72)

Mandatory registration of trials to facilitate collaborations, minimize duplication and ensure that negative results are published to learn from past 'failures'. (73)

To encourage research on diffusion of innovations in health systems. (85)

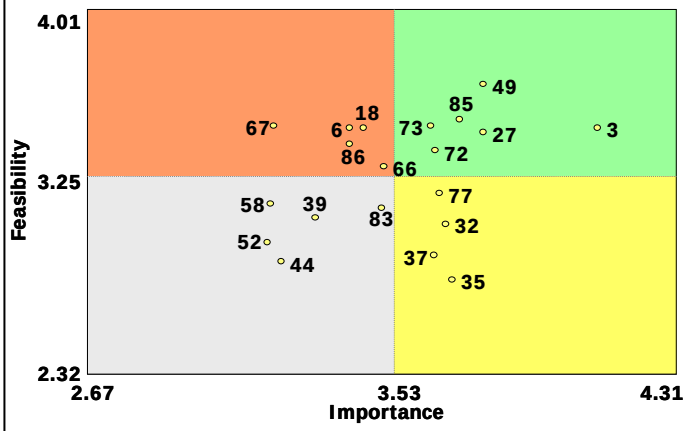
Focus research on interventions whose delivery is affordable in the real world. (32)

Develop and use research designs that can provide faster answers to practice questions. (35)

Developing a dissemination program that aims to reduce health disparities within the community. (37)

To fund collaborative partnerships between public health and primary care stakeholders to improve chronic disease prevention and management in primary care settings. (77)

Region: Stakeholder Collaboration (2 of 2)



Assessing what communities and minority groups want researched by conducting community discussion groups that set research priorities. (6)

Increase the amount of participatory research using qualitative and quantitative methods. (18)

To provide opportunities for researchers to meet with donors and practitioners to demonstrate the return on investment of the research. (67)

To develop closer ties between cancer control researchers and cancer outreach staff. (86)

Increase the generalizability of trial findings by reducing nonessential exclusion criteria. (39)

To develop clinical research protocols with input from larger stakeholder teams that include end-users including patients/families, clinicians, and policy makers. (44)

Demonstrating that we are willing to share the research resources and the power by involving researchers representative of the community and other community members in decision making and compensated positions in the research team. (52)

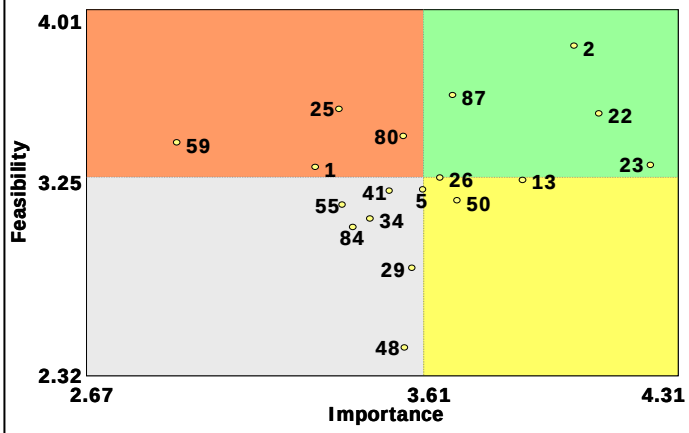
Evaluate the process of community based participatory research. (58)

To include practitioners on research committees at all phases from the formulation or questions to the interpretation and application of results. (66)

Improve the balance between efficacy trials and effectiveness trials. (83)

Region 4. Data and Accountability Systems

Region: Data Accountability Systems (1 of 2)



Seek and identify models of success - Are there practitioners effectively implementing evidence based interventions? Why and how are they doing it? (2)

Provide better support for registries and other data collection programs to monitor outcomes. (22)

Collect standard outcome measures that are important to decision makers, clinicians and policy makers. (23)

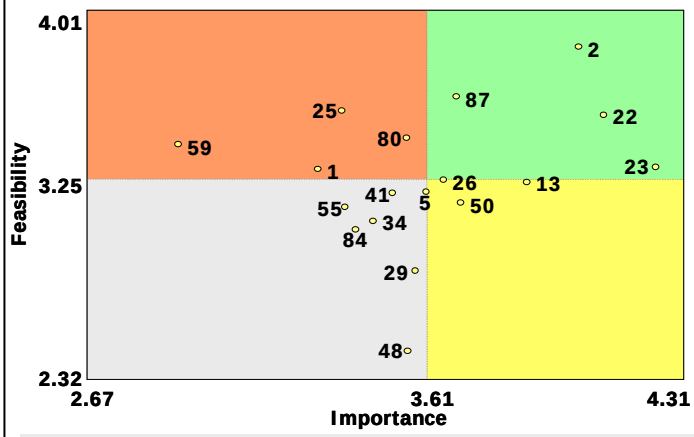
Build in evaluation procedures for both public health agencies and health care systems dealing with cancer control. (26)

Utilize information that is readily available through cancer registries to inform health practice. (87)

To develop and collect quality assurance measures on cancer control interventions. (13)

Install an information system capable of tracking progress on screening tests and providing aggregate data regarding the status of follow-up on abnormal tests. (50)

Region: Data Accountability Systems (2 of 2)



To partner with technology companies to implement evidence-based decision support tools in practice. (1)

Identify organizations that are responsible for dissemination. (25)

Have an easy to use, on-line database where clinicians could submit practical questions that could be used for new research. (59)

To partner with organizations interested in funding the production and dissemination of evidence-based products and programs for patients. (80)

Understand the capacity of practitioners to use an evidence base. (5)

Develop common definitions for interventions and billing codes so that the diffusion of research could be tracked using administrative data sets. (29)

To implement software to allow primary and specialty physicians to integrate evidence-based care. (34)

Understand the capacity of practice systems to use an evidence base. (41)

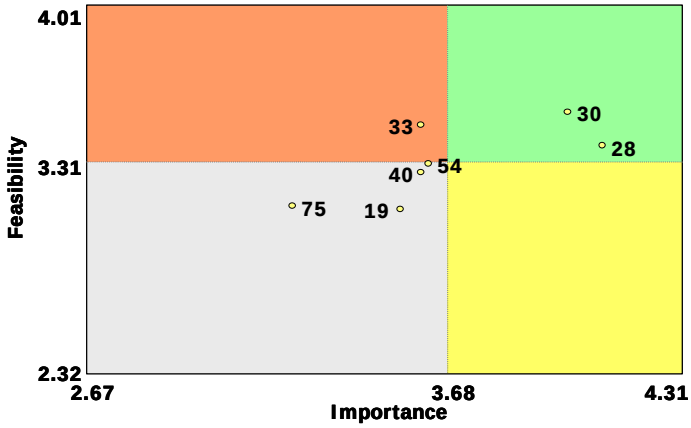
Build capacity in hospitals to accommodate the initial increase in time, cost, and effort required to implement new strategies and therapies. (48)

Install an information system capable of measuring screening occurrence and generating correspondence with those due based on systematic review guidelines. (55)

To develop and collect implementation measures, including how programs evolve over time, and cost measures as part of all projects. (84)

Region 5. Organizational Culture and Structure

Region: Organizational Culture and Structure



To work with policy makers in interpreting the evidence that research provides. (28)

Make research practice integration an explicit part of mission, vision, and strategy. (30)

To develop consensus on clinical practice by systematically reviewing the literature (or existing guidelines). (33)

Actively promote a culture with patients that clinical research is exciting, necessary, altruistic, meaningful. (19)

To integrate chronic disease management with primary care. (40)

Identify and focus on areas in which knowledge is robust enough to enable an accelerated path to progress in prevention, cure, or improvements in quality of life. (54)

Appoint a staff scientist within our cancer outreach program to promote best practices and consult on methodology and program development. (75)

For further information on concept mapping, please contact:

Concept Systems, Inc.
401 E. State St. Suite 402
Ithaca, NY 14850

Telephone: 607-272-1206
Fax: 607-272-1215
E-mail: infodesk@conceptsystems.com
Web site: www.conceptsystems.com