

Summary of Public Comments in Response to the National Biospecimen Network Blueprint

Prepared for C-Change by
Rose Li and Associates, Inc.

June 10, 2004

Summary of Public Comments in Response to the National Biospecimen Network Blueprint

Introduction

The National Biospecimen Network (NBN) Blueprint was commissioned by the National Dialogue on Cancer (NDC), now C-Change, and the National Cancer Institute (NCI) in response to the March 2002 meeting report by the NDC Research Team Forum I in which access to appropriately collected and annotated tissue was characterized as a significant barrier to capitalizing on new genomic and proteomic technologies in the fight against cancer. The Blueprint was constructed with input from over 100 participants interested in cancer research, including academic researchers, clinicians, industry and national research organization representatives, pathologists, and consumer advocacy groups. The Blueprint was intended as a first step towards the goal of developing a large-scale, accessible national system of biospecimens and associated data collection and dissemination. The proposed system would sustain the application of genomic and proteomic technologies for cancer research through the establishment of a pre-competitive, regulatory compliant and genetic privacy-protected, standardized, inclusive, highest-quality network of biological samples and associated data. In turn, the biorepository network would be supported by a shared, readily accessible, and searchable state-of-the art informatics system.

The NBN Blueprint essentially made the following key recommendations:

1. The NBN should be organized as (a) a decentralized network of collection facilities with regional storage, possibly of nonprofit, tissue-repository organizations located near academic medical centers and community-based hospitals that serve large and diverse patient populations, and (b) as a virtual data repository networked across the nation.
2. Specimens from all cancer types should be collected (with matched normal specimens, whenever possible), but the NBN should be structured to provide the quantity and diversity of biospecimens required to meet researcher needs.
3. It should be expected that validated, investigator-driven data generated using NBN resources are submitted to the NBN and linked back to original NBN tissue samples.
4. While recommendations about the general architecture of the bioinformatics network and common data elements require broad input, a central architect should be designated to build and manage the bioinformatics infrastructure to maximize efficiency.
5. The NBN bioinformatics system should be standards-based to enable data and information exchange among system components and the researchers who use them.
6. Effective communications among stakeholders should be considered a high priority for the NBN.
7. The NBN should employ an evidence-based model in planning NBN communications.
8. The NBN should design a communications strategy that clarifies the NBN's role, sets realistic expectations among its different constituencies, and encourages participation by patients, clinicians, and researchers.

9. The NBN Operations Center should be a not-for-profit organization.
10. The NBN governance should be organized at three levels, to include a Board of Governors, the NBN Operations Center, and its business units. The proposed business units would include the following: Research Administration and Support; Specimen and Data Acquisition; Storage and Distribution/Basic Analysis, Advanced Analysis, Bioinformatics and Data Management, and Patient Relations.

The Blueprint was presented for public comment shortly after its release in November 2003 for approximately 3 months (i.e., November 2003 through January 2004). Comments were solicited via web postings on the C-Change (formerly the NDC) and National Cancer Institute websites (Appendices 1 and 2) and at a series of forum meetings in which the NBN Blueprint was presented (Appendix 3). Although all comments were welcome, the submission information on the C-Change website specifically solicited responses to the following questions:

- Does the Blueprint address the barriers involved in developing a national biospecimen resource to support genomic- and proteomic research? Are there additional critical barriers that must be addressed?
- Has the Blueprint demonstrated that the NBN concept describes a unique national resource that adds value to current efforts? [See Module 1: Why the National Biospecimen Network?]
- In reviewing the recommendations in the NBN, what governance models do you think will be most effective in reaching the goals of the NBN? [See Module 6: Governance and Business Models]
- Should all aspects of the proposed NBN model be evaluated in a pilot project, or should a pilot project focus on testing a subset of the Blueprint recommendations? [See Module 8: Demonstration Project]

Respondents

The NBN Blueprint received comments from a total of 10 respondents: Three consumers; two academic researchers; three consumer advocacy groups; and two national research organizations. Several respondents wrote general letters reflecting their views regarding the Blueprint, and not all respondents who addressed the individual questions answered all four questions.

Summary of Responses

In general, seven of the ten respondents were supportive of the strategy suggested by the NBN Blueprint. Representatives of two consumer advocacy groups expressed concern about specific content in the Blueprint, and one national research organization expressed reservations concerning the direction described in the Blueprint.

RATIONALE FOR THE NATIONAL BIOSPECIMEN NETWORK

Blueprint Efforts Reaffirmed

All three consumers supported the NBN Blueprint. One consumer stated that “The Blueprint adds value to present efforts and increases further understanding,” and suggested to “Follow the recommendations of the NBN” with respect to governance. A second consumer stated, “I would

like to see more tissue research done genetically,” and added, “I believe that genetic research could provide keys to certain progressions of certain types of cancers.” The third consumer said, “I believe the NBN model should be implemented. There should be consistency in collection and storage of specimens that would help in diagnostics and in the development of new cancer drugs... This is an opportunity to tie resources together and combine the best practices used by experts in their respective fields.”

One consumer advocacy group was wholly supportive of the project. The group suggested that advocacy groups could be key to gaining patient support for the project, stating, “We believe providing patients and patient advocacy groups with the rationale for the NBN can be a key to persuading physicians and surgeons to participate, as well. Informed patients may well select oncologists and surgeons only if they participate in the Network. For example, our group will list participating physicians and surgeons along with the many potential advantages of donating tissue to the national network. And we plan to provide educational materials for patients to bring with them to their consults.”

Both academic researchers were supportive of the NBN Blueprint. One researcher agreed that the Blueprint does address many barriers [involved in developing a national biospecimens resource to support genomic and proteomic research], and provided suggestions for input from pathologists, handling of tissue samples, providing feedback to investigators, and necessary tissue documentation. The second researcher said, “It is important to get on with this project... It seems that everyone agrees that we need to do this.”

One national research organization was supportive of the Blueprint. This organization stated its “... general endorsement in principle for the concept of a centralized and accessible national repository of biospecimens focused specifically on supporting genetic and proteomic research.” The organization’s comments continued, “There is an undeniable and pressing need for a new and innovative approach to provide the biological materials and clinical information that is essential to advance translational cancer research.”

Benefits of a National Biospecimen Network

A patient advocacy group suggested the following benefits of an NBN: “[If] the NBN provides for patient access to donated tissue, the potential direct therapeutic use of fresh-frozen tissue could well be a realized benefit of participating in the system. Additional benefits might include identification of polymorphisms from blood samples that may predict response to treatments, or the identification of viral components in tumors that may provide additional treatment opportunities. Still another benefit would be that the patient can receive notification about clinical trials for targeted therapies, when the target of treatment has been identified in the patient's donated tissue.”

Blueprint Addresses Barriers

A consumer and a national research organization representative both expressed the belief that the NBN was complete in its discussion of the barriers involved in developing and using a national biospecimens resource, with the latter stating, “[We believe] that the National Biospecimen Network Blueprint, when read in conjunction with the companion RAND publication, Case Studies of Existing Human Tissue Repositories, thoroughly covers the gamut of major issues that must be considered in the creation of such a tissue banking network.”

MANAGEMENT OF ETHICAL AND LEGAL ISSUES

Risk to Privacy Trivial

A long term cancer survivor and advocate with a national organization commented that the “problem” of privacy “is largely theoretical, and the overall risk is in fact trivial particularly on the scale of the risks someone with a potentially lethal disease faces every day. Overall the panic over privacy expressed here is a magnificent monument to inappropriate risk aversion, but then that’s HIPAA for you.”

BIOSPECIMEN AND DATA COLLECTION AND DISTRIBUTION

Concerns about Pathology and Tissue Composition

A cancer researcher advised that the Blueprint could be more explicit in addressing two barriers to its use. This researcher stated that (1) the potential concerns of pathologists and of the clinicians who apply the pathology data to patient care should be explicitly addressed, and that (2) concerns of tissue composition should be addressed:

- (1) “Regarding the pathologist, there should be clear articulation of the pathology data, both macro- and microscopic, that is necessary and relevant for both management of the specific patient and for national cancer databases, as articulated in the American College of Surgeons (COS) requirements for Cancer Centers. The former requirement is more stringent since there are often local requirements that are based on standards of practice of individual cancer specialists and of local cancer centers that are greater than the COS requirements... Furthermore, there does not seem to be a standard of pathology practice with respect to expected pathology data. Specifically, pathology organizations, (American Society of Clinical Pathology, Association of Directors of Anatomic Pathology, and College of American Pathologists) have generated tumor-specific lists of types of data that are ‘expected to be’ a component of a pathology report. In incorporating the opinions of many contributors, these lists tend to be inclusive of too many parameters, often not validated by outcomes analysis, for practice and discrepant. Once a tissue handling and storage strategy, sampling strategy and list of expected pathology data for each tumor have been agreed upon, guidelines for securing tissue for research can be formulated. A related bottleneck is the tendency of many pathologists to be overly conservative in selecting tissue for research... Clear articulation of pathology data that is appropriate for both short- and long-term patient management should minimize this latter bottleneck.”
- (2) “...the Blueprint should provide greater detail as to how each tissue sample has been handled and what the composition of each sample is, based on frozen sections at the time of tissue acquisition. Since diverse methods are used by different investigators, [it is recommended] that all NIH-funded multi-project research programs (including P01s, SPORes, and U01s) be surveyed for tissue handling (acquisition, preparation, documentation, quality control, and outcomes, such as range of tumor cell composition and range of quality of RNA and protein). The most commonly used protocols should be presented as Appendices to the Blueprint.”

Editor’s Note: The Blueprint recognizes “...the need to develop and implement national standards for the proposed system in areas such as sample collection, annotation, storage, and distribution. Such standards would also be developed for training, site monitoring, sample tracking, and quality management. The implementation of standard collection protocols is

expected to minimize experimental variability and accelerate scientific progress” (National Biospecimen Network Blueprint, p. 29).

Minimum Clinical Data Required

A cancer researcher suggested that for maximal long-term value of tissue samples, minimum clinical data should include: Patient demography (age, gender, age of diagnosis concurrent disease, concurrent tumors, concurrent syndrome, drugs, neoadjuvant conventional and homeopathic therapy); tumor pathology (site, histology, grade, stage, including actual size, extent of invasion, number of nodes with tumor and total number of nodes obtained); and clinical follow-up (time to recurrence, time to death, nature of recurrence, subsequent therapy, and response to that therapy, cause of death, etc).

Editor’s Note: The NBN plans include consultations with a variety of groups (e.g., American Joint Committee on Cancer [AJCC], Clinical Cooperative Group Banks, Children’s Oncology Group [COG], etc.) to construct the best model for specimen annotation (National Biospecimen Network Blueprint, p. 39).

Require Tissue Sample Collection as Part of Early Phase Clinical Trials

A cancer researcher stated that the NCI/FDA should require that tissue samples be collected as part of early phase clinical trials and added to the repository. This could then be linked to patient response.

Editor’s Note: The NBN will utilize a “virtual data repository networked across the nation” (National Biospecimen Network Blueprint, p. ix). The general format is explained in the Bioinformatics and Data Management Module.

Incentives for Existing Centers to Share Needed

A cancer researcher questioned how sample collection would be managed from academic centers that already have cancer centers, PPGs, etc. that are tasked to collect material, as well as projects based on the availability of that material. The researcher is concerned that there are no incentives for existing centers to share in the plan, and details are inexact concerning possible links from existing centers to NBN collection sites.

Editor’s Note: The Blueprint recognizes that it will be important to develop incentives for existing resources to participate in the NBN. For example, the NBN could supplement current funding to encourage participation in tissue research efforts external to existing centers (National Biospecimen Network, p. 34).

BIOINFORMATICS AND DATA MANAGEMENT

Data Should Go to the caBIG Database

A cancer researcher suggested that the data should go to the caBIG database, not a separate NBN database. This researcher stated, “Centralized [information] is needed, not another database.”

COMMUNICATIONS

Desire for Patient-Specific Information

Comments from patient advocates and consumers generally objected to the NBN's prominent focus on researchers' needs and position against sample management by donors. A patient advocate suggested that it would be extremely important to allow patients access to their own collected tissue, if they are to cooperate with and be motivated to contribute to a national biospecimens network. ("What could really matter to patients, and motivate participation, is the opportunity to get useful information about their own cases. Yet the report dismisses these possibilities.")

Another consumer advocate suggested that there are serious issues about which data should be made available to those who indicate a desire to have them. The representative did not believe the statement that "the information is unlikely to be useful during the course of the patient's disease." This respondent suggested, "Prognostic information would be of interest to many whenever it becomes available," and continued, "If there was a conflict between donating to a national biorepository and having a sample I could have access to when I needed it, the national repository loses. I think patients who donate samples should be given an opportunity to have a sample stored for their use as well. I think that would be very fair and appropriate compensation for donation. It would also motivate patients to donate their tissue."

Editor's Note: Specifically, the NBN states, "It has been suggested that biospecimen banks agree to inform donors of future discoveries and therapeutic advances as a quid pro quo for tissue and information contributions. Factors that complicate this arrangement and may make it impractical include:

- *The deidentification of tissues and data that make it difficult to recontact donors*
- *The progression of a patient's disease, and subsequent treatment that may make it difficult to determine the relevancy of new information*
- *The very small likelihood that clinically or statistically validated results would be available during the course of the patient's active disease*
- *The sheer magnitude of the task of maintaining a valid patient-contact database"* (National Biospecimen Network Blueprint, pp. 17-18).

The NBN also states, "Returning research results to patients, however, raises major concerns. Patient/physician reliance upon unvalidated results for clinical decisionmaking has caused harm to patients. It is important that research results be validated and done in a reliable (e.g., Clinical Laboratories Improvement Act approved) laboratory before they are used for clinical decisionmaking. There is a potential risk of liability in providing information to patients at too early a stage in the research" (National Biospecimen Network Blueprint, pp. 71-72).

Communication with Investigators

A cancer researcher had the following comments: "The governance model should provide feedback to the investigators who obtain samples and ongoing communication about tissue handling and processing. I also recommend that the business model include incentives for the investigators collecting tissue and data to improve this upfront handling of materials and data, so that it can be improved and quality control can be streamlined. This is particularly important in

academic centers where the investigators who initially handle the tissue can make significant and meaningful contributions to tissue preparation and cell characterization and purification.”

Editor’s Note: The NBN includes education and outreach to researchers in its Communications Module (National Biospecimen Network Blueprint, p. 75), and incentives tailored to each kind of source would be developed to encourage many entities to participate (National Biospecimen Network Blueprint, pp. 47, 91). The NBN also recognizes that “[a] clear research need is the timely and equitable access to biospecimens and associated data without undue administrative burden, as well as a prescribed mechanism for rapid turnaround of request” (National Biospecimen Network Blueprint, p. 43).

GOVERNANCE AND BUSINESS MODELS

Concerns About Unwieldy Governance Process for Satisfying Stakeholders

An academic researcher stated that it is important to move forward with the project. The researcher contended that the idea of contacting all stakeholders and to develop a consensus will take years and still not satisfy everyone. This is considered unacceptable, given the 2015 goal. This researcher proposed that “...a small decision-making body should decide how to start now and get on with it. It can be tweaked after 3 years if need be.” It was suggested that representatives of each stakeholder group be selected and empowered to make decisions for the community to expedite the process.

Another commentator was more concerned, arguing that “the construction of such a convoluted structure of stakeholders with such competing and divergent interests seems doomed no matter what the governance model is.”

Skepticism about Business Methods

A consumer advocate said, “This elaborate model seems designed to enable a business method that the early for-profit ventures in this domain have here-to-fore failed to construct. The NBN will have a lingering air of suspicion within the patient advocacy community.”

A consumer organization representative stated that the concept presented was “too grand and too similar to some of the authors’ current business plans. The perception of a consortium-sanctioned business pass-through is a problem for the NBN to clear the public/patient sniff test.”

Editor’s Note: Specifically, the NBN states, “Business unit work... can be carried out by any private or public entity—including existing businesses or research consortia—through a competitive process” (National Biospecimen Network Blueprint, p. xii). Also, regarding proposed funding and governance models, the NBN recognizes that “...a good portion of the chain of trust [in the NBN] ...is embedded in the expectation that a nonpartisan and nonprofit-motivated organization have stewardship of the NBN” (National Biospecimen Network Blueprint, p 86). In utilizing a nonprofit status to enhance credibility and maximize public trust, the NBN hopes to dissuade these concerns (National Biospecimen Network Blueprint, p 97).

Alternative Model Proposed

One national research organization suggested that, because of the special circumstances surrounding specimens that it is interested in, “We do not believe that a national repository for [such] tissues is a realistic goal, and we fear that attempts to establish such a centralized national repository would only further limit the ongoing need to collect adequate biopsy specimens

required for the conduct of current clinical trials and correlative studies. We suggest that consideration be given to a different model that could facilitate the NBN goals.” The following model was proposed:

- 1) “Institutions and cooperative groups running clinical trials should be required to incorporate specimen collection prior to therapy on all future studies, to the extent possible, and under appropriate informed consent.
- 2) “Virtual” tumor banks should be established and supported linking together collections of specimens held by single institutions or referral centers, to which would be tied validated diagnostic information, and regularly updated clinical data.
- 3) Consortia along the lines of the Leukemia Lymphoma Molecular Profiling Project can facilitate the sharing of biological specimens and the pooling of clinical and biological data in a highly validated and rigorous fashion. The originating institutions hold the specimens and the continuously updated clinical information, but when a need for a particular lymphoma type specimen is identified, institutions will share their specimens for common collaborative studies. The contributing pathologists carefully validate their specimens prior to submitting them for analysis, and the specimens will be re-reviewed by an expert pathology panel, both before and after the scientific data are collected. The clinical investigators will continue to gather updated outcome data enhancing the power of observations tied to survival. Similar consortia operating in Europe, such as the GELA and the German Hodgkin’s Study Group, have shown the success of this model for years.
- 4) We think the NCI should also consider funding a limited number of pilot projects...”

NBN Should Be Funded with New Monies

Many respondents made specific suggestions with regards to barriers facing the development and use of a national biospecimens resource. One national organization addressed the issue of funding with the following comments: “...the subject of financing requires special consideration. It is [our] assumption that the National Biospecimen Network will supplement current valuable specimen banks. Therefore, we are endorsing the need for and goals of this project with the condition that it is funded with new monies. The National Biospecimen Network should not have an adverse effect on the support of current tissue banking infrastructures or on the funding needed overall for cancer research.”

Another national organization stated that “Funds should be made available, for those institutions and groups of collaborators who can come up with an adequate plan to solve the problems and make tissues available for the necessary studies. These funds could be in the form of a special set aside, RFP, or new fund raising efforts.”

Editor’s Note: The NBN addresses funding as follows: “Because the NBN is expected to be a joint effort between private and public sectors, mechanisms should be identified to secure both public and private funding. In addition, user fees may cover some of the expenses.” (National Biospecimen Network, p 80)

Importance of Practice, Performance, and Standards Setting

An advocacy group representative noted the lack of focus on a number of areas regarding practice and performance setting, including:

- Solution framework design
- Metrology and universal reference standards for technology as well as biological data
- Clinical data capture

- Benefit sharing scheme with the stakeholders (including donors)
- Negative data submission and management
- Required data resubmission by users.
- Embargoed data handling and sharing
- Publication guidelines
- For-profit access and/or restrictions
- Biomarker intellectual property rights
- Proposed integration with other agencies (NIH, FDA, NIST, IEEE, ANSI, ISO, etc.)
- International coordination and harmonization

A researcher stated that without more specific details, it was difficult to tell whether the NBN would add value to present efforts. The respondent stated, “A major concern I would have before I used non-fixed, frozen samples is confidence in many items, including, details of how the sample was obtained and processed, what the composition of the sample was (based both on a pathologist’s assessment and visual documentation, either by frozen section or by representative digital images annotated with pathologist’s and tissue technician’s comments). I would think it less important, at present, to know the quality of RNA; we routinely independently assess the quality of RNA of all samples, since degradation may have occurred during tissue storage and transport subsequent to initial tissue handling.”

A second patient advocate took issue with the governance and funding model presented. The individual suggested that the government should create, support, and facilitate the processes, forums, management, and compiling of standards, guidelines and best practices for such a national resource.

Editor’s Note: The Blueprint recognizes these issues, and proposes national standards for sample collection, annotation, storage, and distribution. (National Biospecimen Network Blueprint, p. 29) Quality assurance (QA) through the NBN Operations Center and quality control within the individual business units would function cooperatively to maintain standards and compliance. “The NBN is envisioned as a standards-based” organization with QA at its heart” (National Biospecimen Network Blueprint, pp. 88-89). The Blueprint suggests a non-profit model so that the NBN would be able to accept funds from both public and private sources (National Biospecimen Network Blueprint, p. 86).

Maintain Direct Connection between Tissue Bank Specimens and Data

A national research organization representative observed that “Truly valuable tissue banks linked to continuously updated clinical information require ongoing meticulous management by a team of committed investigators. A direct connection between the supervisors of the tissue bank and the specimens, the clinical data, and the analysis of outcome data must be maintained or the information derived from the bank will deteriorate to the point of uselessness. On the other hand, maintenance of a direct connection between the tissue bank supervisors and the use and interpretation of data derived from it assures a high commitment to quality and continuous addition of invaluable updated information.”

Editor’s Note: Most of these issues are broadly addressed in the Blueprint. For instance, proposed in the Blueprint is a three-level governance model including a Board of Governors possessing a mix of strong science and business skills; an NBN Operations Center that will

manage the operations of the NBN; and several business units that will report activities to the NBN Operations Center and the Board. This governance model should provide the necessary, thorough, and continuous oversight to the NBN. (National Biospecimen Network Blueprint, pp. xii, 87). The NBN also will provide “a comprehensive framework for sharing and comparing research results through a robust, flexible, scalable, and secure bioinformatics system...” that will be closely monitored by the Operations Center and the Bioinformatics and Data Management Business Unit (National Biospecimen Network Blueprint, pp. vii, 61). The proposed bioinformatics system is characterized as follows:

- *“The repository should support open research access and be searchable and mineable via the Internet and incorporate computational analysis tools. The technology should be amenable to sharing appropriate clinical and longitudinal data, and at the same time should protect the donors’ privacy and confidentiality. The repository should be available to a broad researcher base, and should associate clinical and experimental data with the specimens.*
- *The database should support the exchange of information; it should capture data generated through use of the resource (both primary data and data interpretations), but should share and restrict data according to specific rules established by the NBN.*
- *Although likely to be challenging, it is important that validated, investigator-derived data be returned to the NBN and linked back to original NBN tissue samples. An expanded dataset, created by the return of this experimental data to the NBN, could then be made available to all investigators.*
- *The architecture should have the ability to “scale” as the volume of data increases, and it should have the ability to “extend” as datasets and types of data change. The architecture should provide interfaces that enable the construction of data mining and extraction tools, providing a comprehensive computational and data analysis environment” (National Biospecimen Network Blueprint, p. 11).*

Finally, the Blueprint supports the collection of longitudinal data and acknowledges the need for statistical expertise to incorporate such diverse follow-up data into interpretation of laboratory results (National Biospecimen Network Blueprint, p. 10, 40).

DEMONSTRATION PROJECT

Pilot Projects Critical

Commentators were generally aware that the “process most definitely needs to be a step-wise incremental project with modules added in competing pilot project fashion.”

A national research organization suggested that, rather than creating a national biospecimens network as outlined, the NBN facilitators should “consider funding a limited number of pilot projects for the following purposes:

- Facilitating the establishment of lymphoma consortia and virtual tissue banks utilizing both clinical trials groups and virtual tumor banks formed by institutions with existing tissue collection facilities to rapidly and economically take advantage of existing facilities and tissue and therefore, accelerate the research process.
- With respect to patients who are not enrolled in a clinical trial and are being treated at an institution which is part of a lymphoma consortia to provide for such institution to register such patients in a database such as that maintained for clinical trials, to gather

validated specimens and other diagnostic information and ongoing clinical data for such patients and share tissue with other institutions in the consortia.

- With respect to patients who are not enrolled in a clinical trial and are not being treated at an institution which is part of a lymphoma consortia to provide for specimens to be handled at a nearby member of a consortia, or by a tissue bank at the NCI.
- Funds should be made available, for those institutions and groups of collaborators who can come up with an adequate plan to solve the problems and make tissues available for the necessary studies. These funds could be in the form of a special set aside, RFP, or new fundraising efforts.
- The organization also strongly supports letting the investigator-initiated peer review process work to help solve this important problem.”

The two national research organization respondents offered their assistance to the NBN in exploring funding options and participating in a pilot project, and offered their expertise in the future development and evolution of the NBN (one national research organization) or an alternative tissue resource plan (the second national research organization).

Editor’s Note: Regarding this, the Blueprint states that the NBN “does not anticipate supplanting the existing tissue collection resources in the United States; rather, it seeks to fill a niche not served by current resources... Some existing systems will align well with the goals of the NBN, and their involvement and expertise will be welcomed... [Other] existing systems may not be candidates for genomics/proteomics research or future advanced technology purposes, but they are valuable in their own right... These existing systems will continue to serve their specific users’ needs” (National Biospecimen Network Blueprint, p. 9).

Synopsis

Of the ten respondents to the call for public comments regarding the NBN, only one (a national research organization) rejected the recommendations of the NBN, stating that the establishment of a centralized national repository would have a negative effect on attempts to collect adequate biopsy specimens relating to the organization's interests. This organization recognized the need to collect biological specimens for future studies, but was concerned about the impact on efforts to collect non-solid tumor samples, which require specialized personnel and diagnostic methods, provide minimally sized specimens, and may require retention of all biopsy material to prepare patient-specific treatments. This group offered an alternative presented above.

Seven respondents were highly positive about the recommendations set forth in the Blueprint. All three consumer respondents believed that the recommendations set forth by the NBN should be implemented. Both cancer researcher respondents and one of the two national cancer organizations affirmed the need for a centralized and accessible national repository of biospecimens focused specifically on supporting genetic and proteomic research, while offering additional suggestions to the NBN Design Team. One consumer advocacy group suggested that the existence of the NBN might be a primary motivation for patients to donate tissue.

Two of the three consumer advocacy group respondents expressed concerns about specific aspects of the Blueprint. These include the need to give donors access to their tissue and associated data; the need for additional focus on a number of protocol and standardization issues; and concerns that the involvement of for-profit stakeholders will compromise the execution and integrity of the NBN project. Neither of these consumer advocacy group respondents suggested rejection of the Blueprint. One suggested that it be fully funded and administered by the Federal government; the second recognized the NBN as an opportunity for donors to obtain useful information about their own cases, and strongly advocated donor access to their own samples within the NBN.

Overall, the majority of respondents were supportive of the NBN Blueprint and valuable feedback was provided. All responses will be considered during NBN implementation strategy deliberations and this comments summary will be made publicly available via the C-Change Website in the summer of 2004.

APPENDIX 1
Opportunity for Public Comment on the National Biospecimen Network Blueprint
Excerpted from C-Change Website

“...We request that you review the NBN and the RAND study and submit any comments and/or suggestions by **January 31, 2004**. Input will be summarized and placed on the website along with the Blueprint and RAND reports.

We welcome all comments, but would be specifically interested in your responses to the following:

- Does the Blueprint address the barriers involved in developing a national biospecimen resource to support genomic- and proteomic research? Are there additional critical barriers that must be addressed?
- Has the Blueprint demonstrated that the NBN concept describes a unique national resource that adds value to current efforts? [See Module 1: Why the National Biospecimen Network?]
- In reviewing the recommendations in the NBN, what governance models do you think will be most effective in reaching the goals of the NBN? [See Module 6: Governance and Business Models]
- Should all aspects of the proposed NBN model be evaluated in a pilot project, or should a pilot project focus on testing a subset of the Blueprint recommendations? [See Module 8: Demonstration Project]

Comments that are received before the deadline, will be posted on this website in a timely fashion. If you have any questions, or require assistance in submitting your comments, contact Ann Horton at 800-830-1827.

There are two ways to submit your comments:

Online: (This is the preferred route for submission.)

Fill out the form below and click on the "Submit Comments" button.

Fax:

Faxed comments should be received by **January 31, 2004**. Fill out the [Fax Submission Form](#) (pdf, 61kb) and send it to **(301) 593-9433**. They should include the full name, postal address, and affiliation (if applicable) to the sender in order to be considered complete.”

APPENDIX 2
Director's Update: November 18, 2003
National Biospecimen Network Blueprint Available for Public Comment
Excerpted from NCI Website

The development of infrastructure to support cancer research took an important step forward this week with the publication of a report that outlines a new model for a nationwide biospecimen network and database. This proposed new resource is specifically designed to optimize and accelerate the development of genomic/proteomic-based cancer interventions. This multi-sector report is entitled the *National Biospecimen Network (NBN) Blueprint*. The NBN Blueprint, developed through the National Dialogue on Cancer's Cancer Research Team in collaboration with the National Cancer Institute (NCI), is currently available for public comment on the National Dialogue on Cancer (NDC) [Web site](#). The Blueprint development process was informed by a second report, *Case Studies of Existing Human Tissue Repositories: "Best Practices" for a Biospecimen Resource for the Genomic and Proteomic Era*, prepared by the RAND Corporation. A pre-publication version of this second report is also available from the NDC Web site. The public comment period for both reports will last until December 31, 2003, and a summary of comments received will be posted on the NDC Web site.

Over the past year, NCI has collaborated with the NDC to develop the NBN Blueprint. More than 100 experts from all sectors involved in cancer research, drug development and patient advocacy - including NCI representatives - contributed to the Blueprint development process. NCI was pleased to be able to collaborate on this important project, as we have a significant interest in biorepositories and want to ensure that all NCI investigators who conduct genomic and proteomic research will have access to the highest quality biospecimens that are uniformly collected, stored, and annotated.

The NCI currently supports several human tissue resources, including the Cooperative Human Tissue Network, Clinical Trials Cooperative Groups, Cancer Family Registries, and tissue banks located at individual Specialized Programs of Research Excellence (SPOREs). These resources provide thousands of valuable biospecimens annually to researchers for many types of scientific investigations. The NBN Blueprint differs from the design of existing repositories in that it proposes to standardize most of the key aspects of tissue collection, processing, annotation, access, and distribution to facilitate comparison of genomic and proteomic data derived from biospecimens collected at different institutions. A new networked biospecimen resource with these qualities will allow investigators to compare data and eventually to search the developing *in silico* resources to support both discovery and development research. National resources of this type are being developed in several other countries, and the NBN was planned in collaboration with similar efforts in the United Kingdom.

The NBN Blueprint describes a "best practices"-based system to manage standardized collection, processing, and storage of biospecimens (i.e., tissue, blood, plasma, and serum) as well as the collection of associated pathology, clinical (including longitudinal), and genomic data. The NBN Blueprint proposes that biospecimens be available to public and private researchers without intellectual property restrictions. In addition to establishing a centralized, peer-review process for distributing biospecimens to researchers, the NBN recommends the creation of a secure, Web-based bioinformatics platform to allow broad access of NBN data and related analysis tools to the scientific community. The NBN Blueprint also includes detailed recommendations to protect patient privacy and how to conduct effective educational outreach activities to researchers, patients, and the general public. The NBN model was designed to be compatible with similar international efforts that are currently under way.

The NBN report recommends the initiation of one, or a number of, pilot projects to test the feasibility of this new concept. One approach recommended to accomplish this goal is through the application of the NBN concept, "best practices" and specific operational plans for existing high-quality tissue resources. The NCI is supportive of this strategy. We are willing to join with other organizations to plan and implement the NBN model by harnessing the best of current resources. We are committed to the objectives outlined in the NBN Blueprint and to implementing the concept to leverage the promise of genomics and proteomics as quickly as possible to support the achievement of our goal to eliminate the suffering and death due to cancer.

Andrew C. von Eschenbach, M.D.
Director, National Cancer Institute

APPENDIX 3

Selected Discussions of the NBN Concept with the Cancer Community

American Association for Cancer Institutes

American Association of Medical Colleges – Advisory Panel on Research

Cancer Leadership Council

C-Change Research Team

Inter-Prostate SPORE meeting

NCI's Board of Scientific Advisors

NCI's National Cancer Advisory Board

Prostate Cancer Funders' Group

Sarcoma Progress Review Group Meeting